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MARKETING LIVESTOCK AND MEATS

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MARKETING LIVESTOCK AND MEATS

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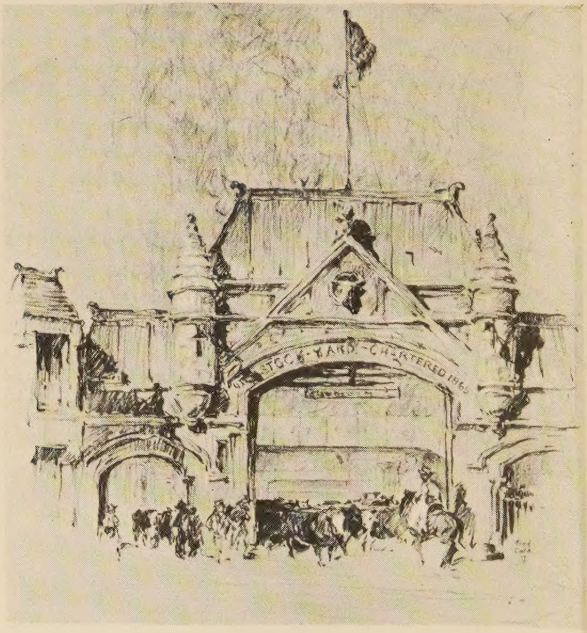


"WITHOUT THESE SHALL NOT A CITY BE INHABITED AND MEN SHALL NOT SOJOURN NOR WALK UP AND DOWN THEREIN."

UNIV OF MICH.

MARKETING LIVESTOCK AND MEATS

By

TAGE U. H. ELLINGER

and

RUDOLF A. CLEMEN

ARMOUR'S LIVESTOCK BUREAU
EDWARD N. WENTWORTH, DIRECTOR
UNION STOCK YARDS
CHICAGO, - ILLINOIS

1929

FOREWORD

RECENT years have shown a rapidly growing interest in the economic and technical aspects of the marketing of agricultural products. Human nature induces almost any seller to suspect that he did not get the return to which he was entitled, and likewise induces almost any buyer to question the price demanded for the product he is seeking. When the seller of raw materials and the buyer of finished products discuss the proportion which the former gets out of the supposedly high prices the latter pays, the stage is set for suspicion and dissatisfaction. The general failure to understand the functions of the modern marketing system has caused much of this sentiment to be directed against the agencies operating between producer and consumer, about whose contributions and service comparatively little is known.

Armour and Company welcomes the lively interest in marketing problems. It feels that as a fuller understanding and knowledge concerning marketing is disseminated, the public will appreciate that the services performed are the very items that give modern American civilization its conveniences. Each one of us wants to maintain and improve the present standard of living, and is willing to pay the price if the services which make it possible are rendered efficiently and honestly. Such an attitude, generally accepted, is the necessary basis for active co-operation in facilitating the regular flow and interchange of goods, whereby both tillers of the soil and industrial workers are benefited This book is intended as a contribution to further this cause.

PHILIP D. ARMOUR.

Chapter I

ECONOMIC PRINCIPLES OF MARKETING

arketing Non-istent in imitive Society

The simplest organization of society from an economic standpoint exists when each individual, family, or other limited group of ople produces and prepares practically all of the cessities of life and does not resort to selling and ying to satisfy its needs. Such a condition is still und among savages and backward peoples in different rts of the world. It was the primitive stage of ilization in all countries. In early America, for exple, the small settlements were largely self-sufficing; e colonists tilled the soil and derived from it, and m their animals, the products necessary for their mple way of living. Marketing and trading were of tle significance.

vision of Labor eates the arketing Problem

Division of labor had already developed in the ancient world since slaves were trained in the different crafts, and the household was thus served by experts in different lines of rk. There was, however, little exchange of goods, e family with its slaves constituting an economic unit. medieval times specialized production developed ther, and the crafts reached a high degree of perfecn under the strict rules of the guilds. In consequence, ding became a matter of daily life. The goods proced were used in barter for other goods and services nted, or, to facilitate the transactions, products were changed for money, which, in turn, at the holder's nvenience, could be exchanged for other products or vices.

This development was immensely accelerated by the invention of machinery. The introduction of machines into industry brought about such a fundamental change in the structure of society that the period of transition to this new form of production, which took place about one hundred and fifty years ago, has been named the industrial revolution. The most striking consequence of this occurrence was the extreme specialization and division of labor which resulted.

In most lines of human endeavor, nowadays, a man's time is practically never given directly to the satisfaction of his own wants. Instead, he attends to a more or less important detail in an industrial unit where production is only accomplished by the joint activities of numerous individuals. It takes, for instance, the work of several hundred men to dress a hog, or a steer, or a sheep, in one of the big packing plants, each man devoting all of his time to one single simple process.

Under modern industrial conditions, few men produce a commodity for which they can be given the entire credit and reward. Generally, men contribute their part to a production in which they are personally uninterested, except that they can exchange their contribution for money, for which they can secure a corresponding amount of goods and services.

Development of Farm Marketing Problems

Farming is the industry which has been least affected by this change in industrial methods. Most farmers still produce a considerable part of the products which enter into their household; they get their milk, eggs, chickens, vegetables and fruit directly from the farm; many occasionally kill a pig, a calf, or even a steer. In the year 1919 when the last census was taken, the following number of animals were slaughtered on our six and a half million farms—cattle and calves, 1,905,000; swine, 16,800,000; sheep and

mbs, 435,000. Although a considerable number of ese farm-slaughtered animals were sold locally, yet e greater part of them, no doubt, were consumed rectly on the farms.

In recent years, however, farming has also under- ne significant changes. Frequently, livestock, milk d grain are sold, and meat, butter and bread bought; general, the raw goods are delivered to other people d agencies which perform the processing and further stribution of the finished products. The farm, how- er, remained longer than any other unit of production, most economically independent, the different mem- rs of the family knowing how to make for themselves great many of the commodities they now buy in the ores. Nevertheless, arts like home spinning, weav- g and garment making are almost entirely superseded the farm, and only food remains as an agricultural oduct, frequently processed or consumed at the point production.

rm oduction

Farm production also has in many cases been specialized, all attention being paid to the raising of one or a few products e wheat, cotton, cattle or sheep. It is now being alized that this development in the United States s gone too far, and that a return to more generalized oduction is necessary. The diversified farm which n supply the kitchen with most of the goods needed the household has a better chance of keeping the ner in a safe financial condition than the farm where e owner must buy for cash all the necessities of daily e.

odern Consumer emands Marketing rvice

Division of labor, with the engagement of large parts of the population in industrial enterprises, and the specialization of rural population in producing the raw materials of

food and clothing, not only for themselves, but also for this vast urban population, have brought about the necessity of marketing the products of the farm. The consumers demand meat, bread, butter and numerous other finished products, and they insist on having them offered at convenient places, many times at the kitchen door. The farmer, on the other hand, produces livestock, grain, and other products which are of no direct use to the consumer, neither in their raw stage nor at the point of production. A New York housewife would never venture to buy a pig in Iowa; she wants pork chops and bacon at her corner market. The farmer, therefore, does not produce the goods wanted in industrial communities; his products are of no direct use. They must be transported, graded, processed and distributed, and these transactions must be financed until the ultimate consumer actually pays his bills. Only when these additional services are added, are the farmer's products worth money to the consumer.

Marketing a Productive Service

Marketing comprises all these services which have to be performed in order to make raw products salable. It is as essential as production itself; in fact, it is a part of production, so far as it results in goods which have utility to the ultimate purchaser, and, therefore, sales value. When the consumer buys his market supplies, he offers the sum of money it is worth to him to induce others (producers) to provide the raw materials for the goods he wants, and to induce still others (middlemen) to deliver these goods in the form, and at the place and time, desired. The payment, therefore, has to be divided between the producers of raw materials and the middlemen, who perform the additional services which make the products acceptable to the consumer.

Chapter II

THE DISTRIBUTION OF HUMAN AND LIVESTOCK POPULATION

Location of Consumptive Market Modern economic conditions have caused most of that part of the population which is engaged in industry to be assembled in specific heavily populated sections of the country conveniently located to the sources of raw materials and to the means of land and ocean transportation. A glance at Figure 2 shows that the population is densest in the eastern states between Massachusetts and Maryland, and that this densely populated area extends westward along the Great Lakes to Illinois. The ten states shaded black comprise, in fact, 41 per cent of the total population of the country. They constitute the most important area of consumption to which food products must be brought from the vast middle and far western agricultural lands.

Distribution of Livestock Population Figures 3 to 6 picture in a similar way the parts of the country which have the densest livestock populations. It is indicated that beef cattle production is heaviest in a belt running from north to south through the center of the country. Dairy cattle coincide in distribution most nearly with the distribution of human population, except for an extension into the northwest, from which section most of the commercial supply of butter and cheese is forthcoming. The swine population is densest in the cornbelt states which supply most of the commercial hog crop. Some of the southeastern states also raise large numbers, which, however, due to the slow turnover in southern hog rais-

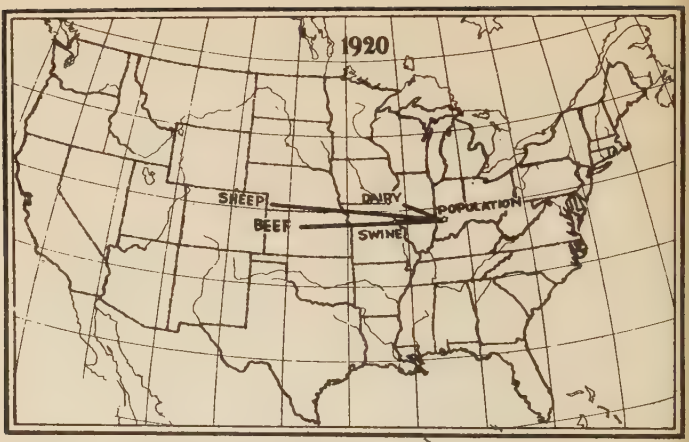


Fig. 1—Centers of Human and Livestock Populations—1920

Fig. 2—Distribution of Human Population. States shaded with black have over 100 inhabitants per square mile land; those shaded with lines, 40—100; those shaded with dots, 10—40; and those unshaded, less than 10. (1920 Census.)

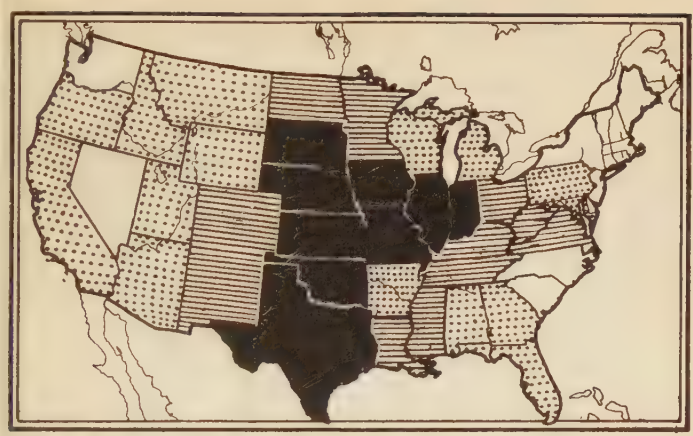


Fig. 3—Distribution of Beef Cattle Population. States shaded with black have over 15 head of beef cattle per square mile; those shaded with lines, 10—15; those shaded with dots, 5—9; those unshaded, less than 5. (1920 Census.)

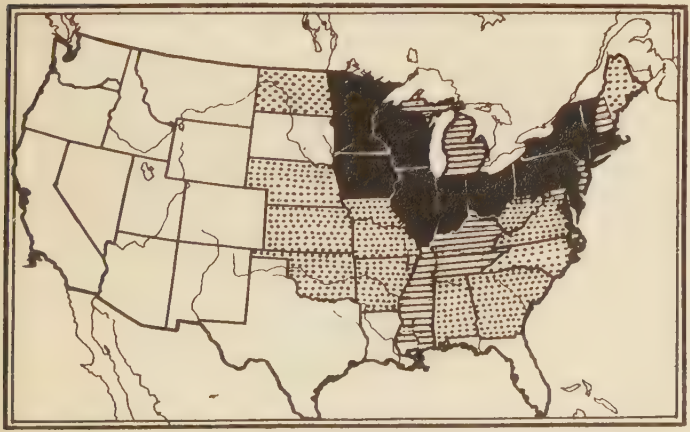


Fig. 4—Distribution of Dairy Cattle Population. States shaded with black have over 25 head of dairy cattle per square mile; those shaded with lines, 16—25; those dotted, 8—15; those unshaded, less than 8. (1920 Census.)

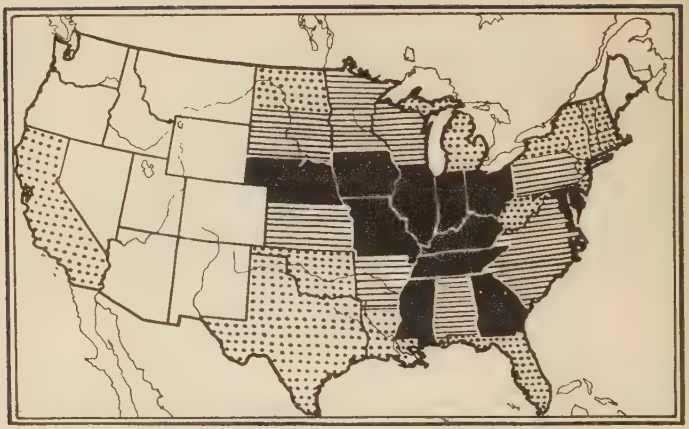


Fig. 5—Distribution of Swine Population. States shaded with black have 30 or more swine per square mile; those shaded with lines, 20—29; those dotted, 5—19; those unshaded, less than 5. (1920 Census.)

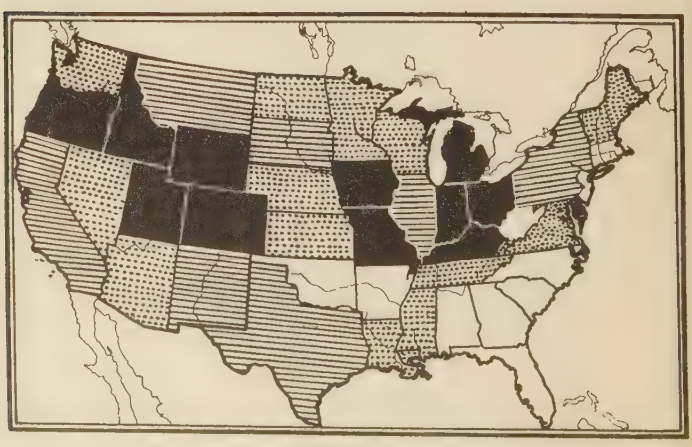


Fig. 6—Distribution of Sheep Population. States shaded with black have over 15 sheep per square mile; those shaded with lines, 10—15; those dotted, 3-9; those unshaded, less than 3. (1920 Census.)

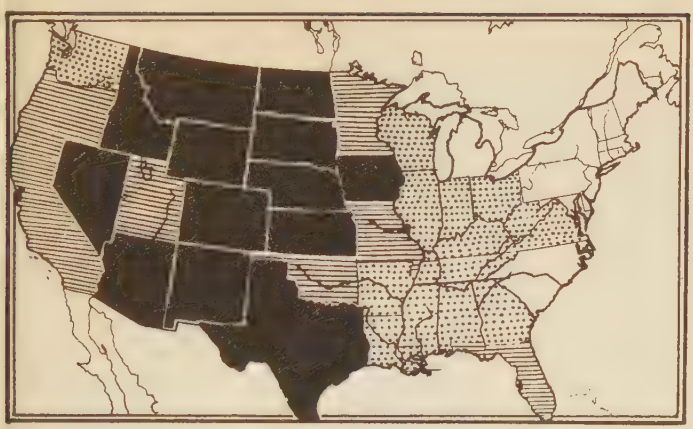


Fig. 7—Per Capita Beef Cattle. States shaded with black have more than one head of beef cattle per capita population; those shaded with lines, from one-third to one; those dotted, from one-tenth to one-third; those unshaded, less than one-tenth.

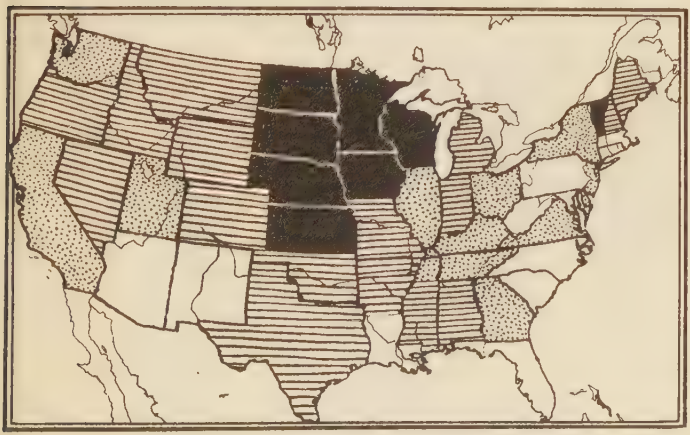


Fig. 8—Per Capita Dairy Cattle. States shaded with black have over one-half head of dairy cattle per capita, those shaded with lines, three-tenths to one-half; those dotted, two-tenths to three-tenths: those unshaded, less than two-tenths.

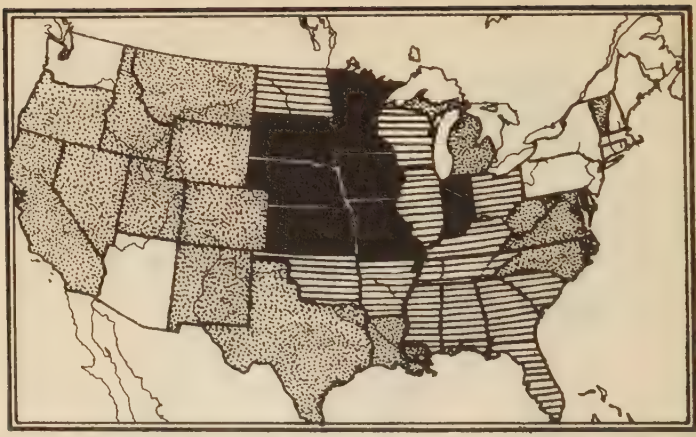


Fig. 9—Per Capita Swine. States shaded with black have over eight-tenths head of swine per capita; those shaded with lines, one-half to eight-tenths; those dotted, two-tenths to one-half; those unshaded, less than two-tenths.

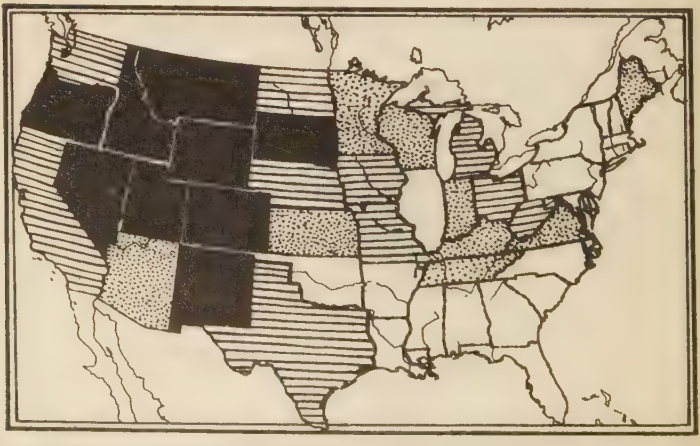
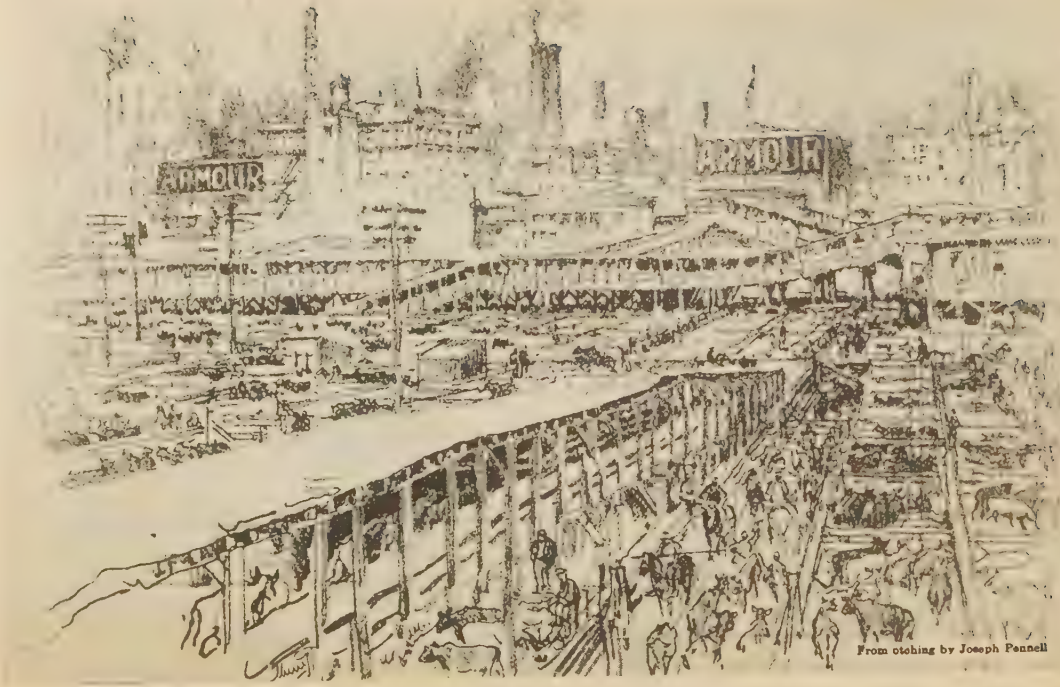


Fig. 10—Per Capita Sheep. States shaded with black have over one head of sheep per capita; those shaded with lines, three-tenths to one; those dotted, one-tenth to three-tenths; those unshaded, less than one-tenth.

From etching by Joseph Pennell

Unloading Cattle



The Heart of a Great Industry

ing practices, do not even suffice to supply the local demand. Sheep show two regions of concentrated production. The western or mountain region is largely devoted to breeding with a localized feeding area in north central Colorado. The Mississippi Valley area is also devoted to breeding in its eastern section, but in the western section, including the states of Iowa and Missouri, feeding is the primary occupation.

Surplus Livestock Producing Areas While from an agricultural standpoint the distribution and density of the livestock population as described are of particular interest, it is the combination of this knowledge with information concerning the relative density of human population which reveals, from an economic point of view, the basic factors in the organization of the livestock industry. Figures 7 to 10 show the regions which have the heaviest production in proportion to the population. The shading is made on the basis of per capita livestock. The states shaded with black, consequently, are those which have the biggest surplus to dispose of. Beef cattle are produced in biggest surplus in the mountain states, in the western part of the prairie region from North Dakota to Texas, and also in Iowa. The surplus producing dairy states are found in a block between Lake Michigan and the range country. Swine are found in surplus in the cornbelt, particularly its western part, with an extension towards the north. Sheep, finally, are found in proportionately large numbers in the mountain region and a few adjoining states. All these maps show, furthermore, that the main region of deficiency is found in the east, particularly in the states of very heavy industrial population.

Distance from Producing to Consuming Areas Figure 1 summarizes the data presented in Figures 2 to 10. The length of the lines connecting the center of human population with the centers of livestock population indicates the average distance which livestock and its products have to be moved from the farm to the ultimate consumer. These distances are—for beef cattle, about 650 miles; for swine, about 250 miles; and, for sheep, over 800 miles. These conditions and the problems they involve have to be met by farm slaughterer, butcher, local packer and national packer combined. The national packers, moreover, are especially engaged in moving the surplus from the states which produce more livestock than can be consumed locally, to the industrial sections of the country, which cannot be adequately supplied with meat products from the immediately surrounding agricultural communities.

Westward Movement of Livestock Centers Figures 11 to 13, in combination with Figure 1, illustrate how the present geographical relationship between human and livestock populations has historically developed. As the industrial population increased in the East, additional western areas were settled for the purpose of livestock raising, and the distances from the centers of production to the center of consumption were accordingly prolonged. This development was made possible by the constantly increasing efficiency of the marketing agencies, such as railroads and packing companies, which move the livestock and its products over the distances indicated on the maps.

Geographical Characteristics of Livestock Statistics based on numbers of livestock do not tell the whole story of livestock population. Climatic conditions vary widely throughout the country and the opportunities for agricultural production differ accordingly. Well-bred commercial cattle largely come from the west while beef cattle breeding in the central states has suffered greatly with the advance of the dairy breeds. Southern cattle are decidedly inferior in meat qualities, as are also southern hogs. The cornbelt is particularly adapted to the production of butcher type hogs while the northwestern states, with small grains and milk by-products available for feeding, have advantages in raising the lighter export type of bacon pigs. The sheep of the mountain states and from Ohio east are more or less pronounced Merino, or fine-wool type, while the sheep breeders of the Mississippi valley largely raise the English mutton breeds.

Fig. 11—Centers of Human and Livestock Populations — 1850

Fig. 12—Centers of Human and Livestock Populations — 1880

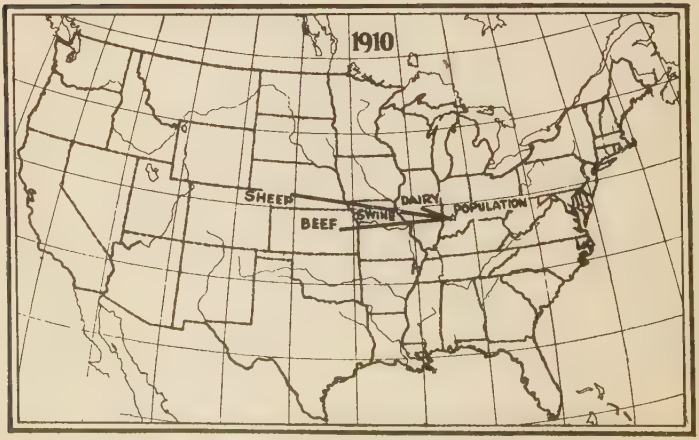


Fig. 13—Centers of Human and Livestock Populations — 1910

Chapter III

ASSEMBLING

Necessity for Assembling Farm Products As a rule, the production of livestock and crops is in such limited volume on each farm that the selling and processing of these products cannot be performed economically at the place where they are raised. It takes the products from a great many farms to total enough livestock efficiently to run a slaughter house or a creamery, and these products must, therefore, be assembled at convenient points, in order that the producer may be able to sell them, and that the industrial concerns which perform the processing and distribution, may be able to buy them in the grades and volumes necessary to meet their requirements. Generally, the central markets are the final assembling points for livestock, but in most cases the assembling process falls in two definite parts, the transportation to shipping point and railroad shipping.

Delivery of Livestock Performed by Growers The transportation of livestock from the farm to the shipping point, or sometimes directly to a nearby market, is performed by the farmer who either drives the animals or transports them by wagon or motor truck. The increased use of motor trucks has considerably widened the area from which direct shipments may be made to market, and an increasing, though small, proportion of the receipts at the central markets arrive in trucks. At Chicago, about half of one per cent of the receipts are delivered by truck or driven in (Figure 22).

Transportation to a shipping point is the ordinary procedure out in the country. In this process there is

Fig. 14—Loading Cattle at Western Shipping Point.

Fig. 15—Loading Sheep in Double-Deck Cars.

a cost involved, such as maintenance of horses and wagon or motor truck, and labor. The producer pays this and considers the expense a part of the cost of production. There is no essential difference between this first step in the marketing process and all of the following steps, such as railroad transportation, processing and distribution, since they are all parts in the production of the final salable commodities.

Livestock Shipping The producer who raises enough livestock may be able to ship to market in full railroad carloads, and in that case the carrier furnishes him free transportation for an attendant per car, or if shipping two cars or more, from a point west of the Illinois-Indiana state line, free return tickets are also supplied. More often, however, particularly in the central and eastern states, each farmer has only a few animals to sell at a time, and he cannot ship independently in an economical way. This condition is the basis for the business of the shippers who buy livestock from the territories surrounding a shipping point, assemble them in carloads and send them to the central markets. In recent years, the producers themselves, through co-operative shipping associations, have taken over a considerable part of this business, performing it at a cost basis. The service of shipping in all cases is essential and involves a standard cost between producer and consumer that must be paid, whether it be performed by private individuals or by co-operative associations (Figures 14 and 15).

Chapter IV

RAILROAD TRANSPORTATION

Rail Organization of Livestock Transportation For the sake of convenience, producers of livestock or their representatives, and the buyers of livestock must meet at definite points in order to perform their business transactions in an efficient way. These points are the so-called central markets. With the exception of the relatively small number of animals brought to market by wagon or truck, the receipts at these markets arrive by rail from shipping points all over the country. The railroads maintain special departments for handling their livestock business, with agents who are personally and intimately familiar with the livestock production of their territories. Transportation takes place in specially built livestock cars, owned by the railroads. At the shipping points, loading pens and chutes (Figures 14 and 15) are maintained, so that one or several cars may be handled at the same time. Along the roads, feed yards are located in which the livestock may be rested and fed. American law requires that livestock shall be unloaded and fed at least every 28 hours, except for the last haul which may be released to 36 hours.

Local freight trains pick up the livestock cars along the branch lines and bring them to the main line, where they are reassembled, and special livestock trains are made up which run to the markets on express train schedules (Figure 18). On arrival, the cars are turned over to terminal railroads, such as, for instance, the Chicago Junction Railway at the Chicago market, for actual delivery to the unloading chutes. These terminal roads may be independent concerns or may be owned by the stock yard companies.

Cost of Rail Transportation A cost is involved for this service of railroad transportation. The railroad companies must maintain valuable road beds and equipment, and must keep a huge staff to insure efficient service during the months of peak freight movement. This requires the investment of vast sums to provide the necessary capital, and the earning of a fair return to attract investors, as well as a reasonable profit to the operator for performing this service. Nevertheless, the freight rate which is paid on the average for livestock transportation constitutes a relatively small amount compared with the value of the stock. The Bureau of Railway Economics made an investigation covering the sales of 1,951 carloads of livestock at the four large markets, Chicago, East St. Louis, South Omaha and Kansas City, during the winter 1923-24. The livestock was received from 28 states, and comprised 25,320 head of cattle and calves, 58,567 hogs and 57,049 sheep, a total of 140,936 head. As a result, out of the price the purchaser paid for the livestock, 5.9 per cent was absorbed by freight charges in the case of cattle and calves; 5.2 per cent for hogs; and 5.9 per cent for sheep; making an average of 5.7 cents out of each dollar the purchaser pays for the livestock. Consequently, livestock may be transported by rail over very long distances without the freight charge being prohibitive. It is also evident, because rates are based on tonnage, that the percentage of the livestock price which goes into freight is smallest in the case of high class and high priced stock, and increases relatively as the grade and value are lowered.

Minimum Livestock Rates Freight rates are controlled by the Interstate Commerce Commission and are subject to revision from time to time. An important feature is the establishment of minimum weights to insure the efficient use of livestock cars and to protect the carriers against losses

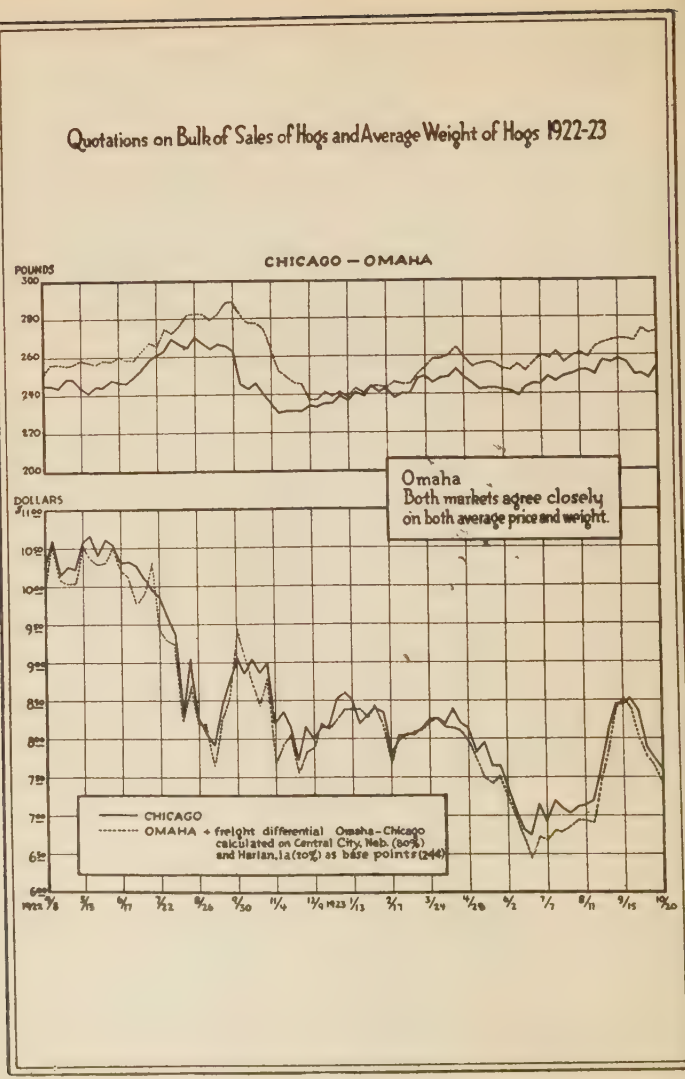

Quotations on Bulk of Sales of Hogs and Average Weight of Hogs 1922-23
CHICAGO — OMAHA
POUNDS
300
280
260
240
220
200
Omaha
Both markets agree closely
on both average price and weight.
DOLLARS
$11.00
10.00
9.00
8.00
7.00
6.00
CHICAGO
OMAHA + freight differential Omaha-Chicago
calculated on Central City, Neb. (80%)
and Harlan, Ia (70%) as base points (244)
1922 3/8
5/15
6/17
7/22
8/26
9/30
11/4
1923 1/13
3/17
3/29
4/28
6/2
7/7
8/11
9/15
10/20

Fig. 16

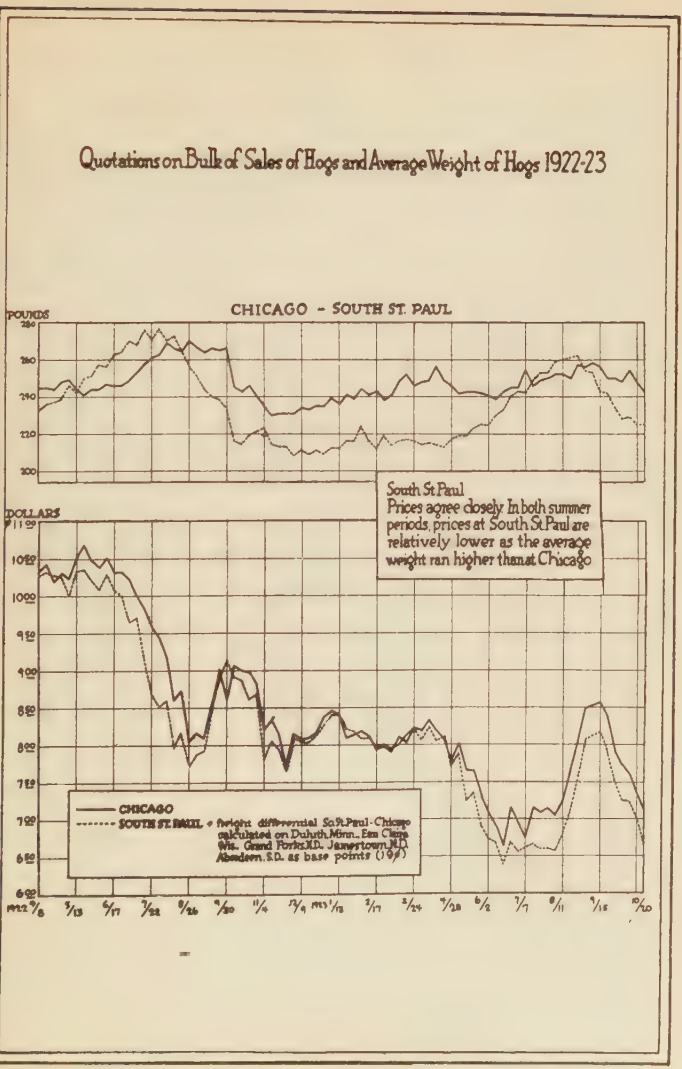
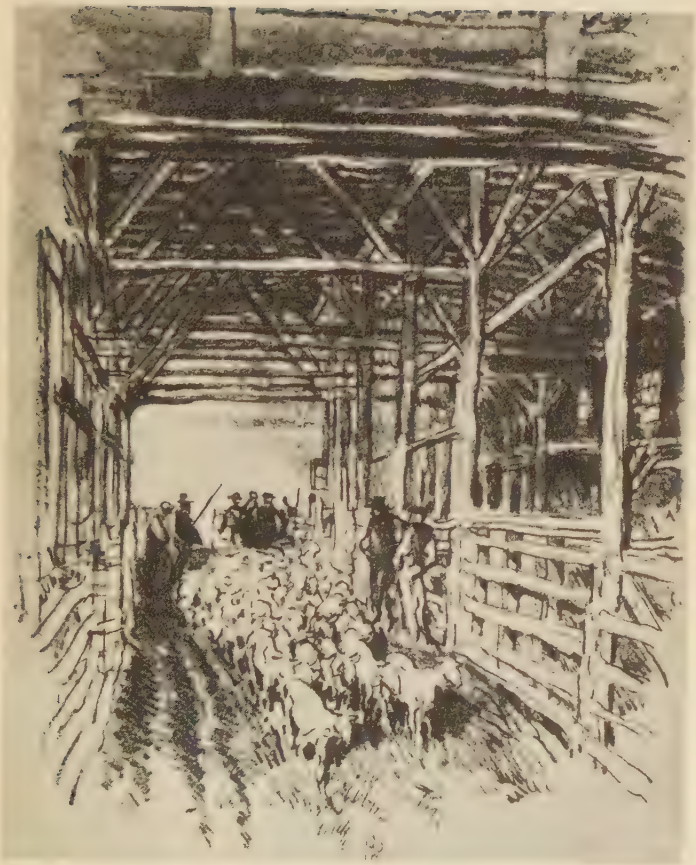

Quotations on Bulk of Sales of Hogs and Average Weight of Hogs 1922-23
CHICAGO - SOUTH ST. PAUL
POUNDS
DOLLARS
South St Paul
Prices agree closely In both summer
periods, prices at South St Paul are
relatively lower as the average
weight ran higher than at Chicago
CHICAGO
SOUTH ST. PAUL + freight differential So St. Paul - Chicago
calculated on Duluth, Minn., Eau Claire
Wis., Grand Forks N.D., Jamestown N.D.
Aberdeen, S.D. as base points (1924)

Fig. 17

from cars not loaded to capacity. There are some regional deviations in the standards established, but in general, the minimum weights are the following—for cattle, 22,000 pounds; for hogs in single deck cars, 16,500 pounds; for hogs in double deck cars, 23,000 pounds; for sheep in single deck cars, 12,000 pounds, and in double deck cars, 22,000 pounds.

Fig. 18—Livestock Train Enroute to Market.

Livestock and Meat Rate Differentials A factor of considerable significance in determining the location of slaughter-plants is the relative freight charge for carrying livestock as compared to processed meat products. If it is relatively cheaper to ship livestock than meat, the bulk of slaughter may be expected to take place near the centers of consumption. On the other hand, if it is relatively cheaper to ship meat than livestock, then the bulk of slaughter will take place within short distances of the producing regions. In order to have a balanced condition between the two, the final costs of livestock products delivered to the consumer should be the same. In the mid-eighties, the dispute on livestock and meat rates reached a climax in the so-called Cooley Award, which estab-



From etching by Joseph Pennell

The Broad Highway to the Packing House

When the Whistle Blows

lished a rate of 40 cents per hundred for cattle and 70 cents for dressed beef from Chicago to New York. This ratio became the basis of the rate structure that has followed, although it was deviated from considerably for several years thereafter. The pre-war rate from 1903 to 1916 was 28 and 45 cents, respectively. During the war, the rates were increased on a percentage basis until in 1920 a maximum rate of 63 cents for live cattle and 96 cents for dressed beef existed. This made the margin per hundredweight between the two, 33 cents instead of the pre-war margin of 17 cents. If all production and manufacturing costs had paralleled exactly the percentage increases of railroad rates, no difficulty would have arisen, but no such parallel ever exists. As a consequence, transportation of dressed meat has been under an increasing handicap with the result that eastern hog slaughter gained 12.2 per cent during the half decade 1919-23 over the preceding half decade, while Illinois hog slaughter decreased 2 per cent during the same period. This example shows the far-reaching industrial effect of a modification in freight rate differentials.

Freight Rates and Price Levels

Apparently different price levels for livestock exist at the different markets. Theoretically, this condition should not obtain if demand and supply existed on the same basis at all points. However, the regions of greatest demand are always removed from the regions of greatest supply, and the cost of transportation must always intervene. One finds that when the freight differential between markets is removed, the price levels for livestock are practically the same for a given quality of animals all over the country. Figures 16 and 17 compare two hog markets with Chicago. Freight rates also determine the areas which may compete with the cheapest producing sections. Outside these areas and a marginal zone where production may be possible under favorable circumstances, the cost of transportation proves prohibitive for production.

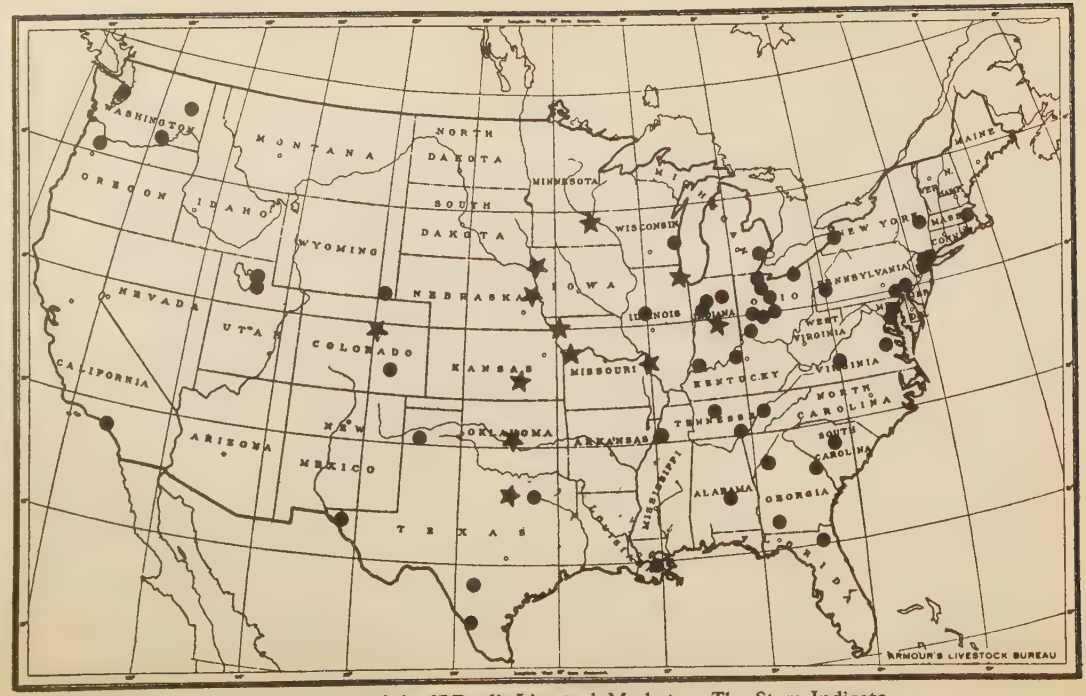


Fig. 19—Location of the 67 Puplic Livestock Markets. The Stars Indicate the 12 Principal Markets.

Chapter V

CENTRAL LIVESTOCK MARKETS

Location and Organization of Livestock Markets

Most of the livestock of this country is sold by the producers at the public livestock markets, of which there are 67 officially recognized by the U. S. Department of Agriculture (Figure 19). Of these, Chicago, Kansas City, Omaha, E. St. Louis, St. Paul, Ft. Worth, Sioux City, St. Joseph, Denver, Wichita, Indianapolis and Oklahoma City are the most important, and handle about 65 per cent of the total business. At the markets, all the organizations and facilities for the livestock trade are present, such as a stock yard company, a transportation company, commission houses, packing companies, livestock buyers and speculators, banks and market newspapers.

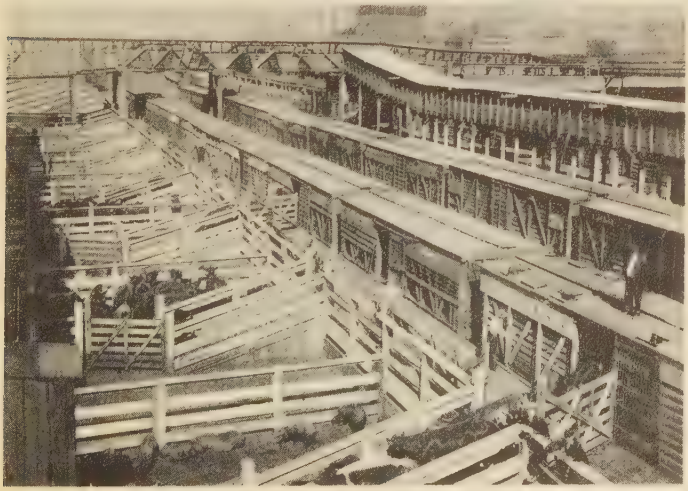


Fig. 20—Unloading Cattle at the Stock Yards.

Services of the Stock Yard Company The stock yard company owns the yards and all the equipment for unloading and sheltering the livestock, also facilities for feeding and watering the stock. Its function is really to provide a hotel for transient livestock (Figure 24). The company derives its income from the sale of feed and a yardage fee—the latter amounting, at Chicago, for example, to 35 cents per head for cattle, 20 cents for calves, 12 cents for hogs and 8 cents for sheep.

Services of Terminal Railroad The transportation company at the market owns the switch tracks leading from the main railroad lines into the yards, and also the engines which handle the livestock trains to and from the loading chutes. Its

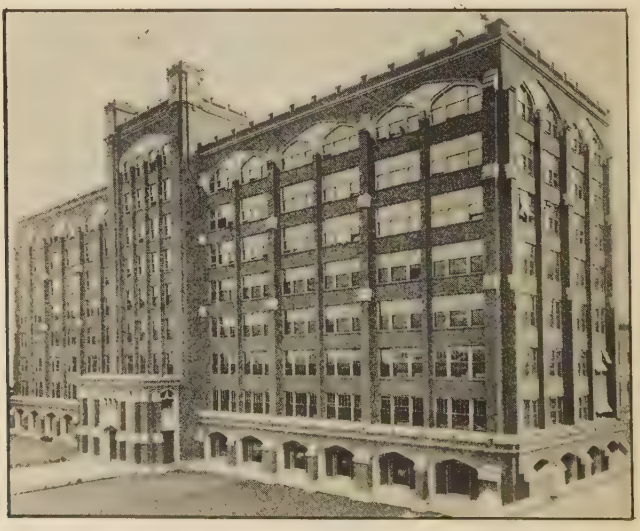


Fig. 21—The Chicago Livestock Exchange Building.

service comprises the assembly of the livestock cars from all railroads supplying the market and the delivery to these railroads of outgoing shipments. Its pay is received through switching charges at so much per car.

Services of Commission Companies The commission companies which act as representatives of the sellers are organized in the so-called livestock exchange and have their offices in the livestock exchange building (Figure 21). The commission firms have allotted to them by the stock yard company certain groups of pens in the market where they bring the stock consigned to them and offer it for sale. No rent is paid for these pens other than the yardage fee paid by the livestock shipper. The commission firms maintain salesmen who ordinarily specialize in certain classes of livestock, assuring a high degree of efficiency. The grower of the livestock may himself offer his stock

Fig. 22—Direct Delivery by Truck in the Stock Yards.

Fig. 23—The Stock Yard Inn, Chicago.

for sale, but due to unfamiliarity with market conditions would be likely to get less for his stock than the commission house salesman procures. For its service, the commission company is entitled to a fee according to detailed rules. The rates at Chicago are approximately $17.00 for a straight carload of cattle or calves and $14.00 for hogs or sheep in single deck cars and $20.00 for double deck cars. Additional stated charges are allowed where due to mixed stock or mixed ownership, further services are required. Since the war, co-operative selling organizations have been established which return to the producer owners, any profit secured after the cost of service has been paid for.

Services of the Packer At all markets, local packers have erected plants from which they supply the neighboring territory with meat (Figure 38). At the big markets where there is a surplus of livestock in proportion to the local needs, the national

packers have located their plants (Figure 39) in which they process livestock, ship the products to all parts of the country, and also abroad, and store other products for the use during seasons of short livestock supply.

Services of Order Buyers and Traders Besides the buyers from the local and national packing houses, so-called order buyers are operating on the market. These men buy mostly on orders for eastern packers, and ship the livestock to the seaboard for slaughter. The traders or speculators buy and sell within the market wherever they expect a chance of profit, and especially buy mixed carloads, sort these and make up new loads of uniform grades.

Other Central Market Services Stock yard banks (Figure 26) provide facilities for the transactions through commission man and packer which enable the shipper to carry cash home with him if he so desires, or to obtain transfers of credit to his local banking institution. Market papers (Figure 25) inform the shipper as to receipts, prices, and trade conditions. In recent years the government has established a service at the larger markets providing regular quotations and other information. The sanitary contions are also under the control of government officials.

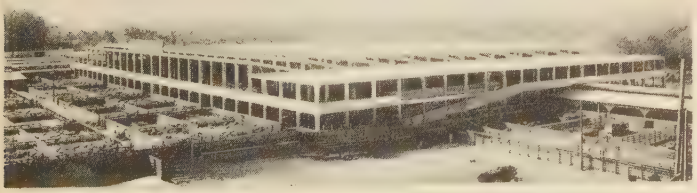


Fig. 24—Concrete Sheep Barn — Denver Market.

Fig. 25—Chicago Daily Drovers Journal Building.

Fig. 26—Stock Yard Banks at Chicago.

Chapter VI

METHODS OF BUSINESS AT CENTRAL MARKETS

Yarding of Stock When the livestock cars have been switched from the main railroad lines into the yards, by the terminal railroad, they are unloaded at the chutes by representatives of the stock yard company who receive the waybills and take over the responsibility for the stock (Figure 20). The animals are brought to the pens of the commission firm to which they are consigned and locked in each pen until the commission firm acknowledges receipt of the stock by requesting the opening of the padlock. For the information of the commission men, the bills of lading are called and posted at the receiving office or chute house. The commission men may also meet the trains and take over their stock from the stock yard company at the chutes.

Selling of Stock The commission man orders the feed for the stock and offers the stock for sale. It is customary that only one buyer at a time negotiates with the salesman and the deal is completed by a word or nod of the head, no written contract being prepared (Figure 27). The bidding is on the basis of price per hundred pounds live weight and immediately after the purchase, the stock is driven to the scale houses operated by the stock yard company. The total price is determined on the basis of the weight stamped on the scale ticket. When the stock leaves the scale house (Figure 28), the responsibility of the commission man ends, and the stock is in the possession of the buyer, who ordinarily drives it to his own pens where he can keep it until it is ready for slaughter or transportation out of the market.

Fig. 27—Cattle Buying.

Fig. 28—Scale House.

Hold-overs At most of the livestock markets trading stops at 3:00 P. M. Animals which are in the yards and which are not sold at that time constitute the "hold-overs" (Figure 31). Hold-overs are sometimes believed to be an instrument of price manipulation but statistical studies have shown that the number of hold-overs bears very little significant relation to price movements and hogs are practically as often held over to meet a rising market as a declining.

Payment to Producer All sales of stock are cash and the same afternoon on which the stock is sold commission firms make up their accounts with their customers. From the amount actually received for the stock is subtracted the amount of the railroad transportation bill, which the commission man refunds the stock yard company to meet the bill it settled on receipt of the cars. Yardage fee, feed bill, insurance fee, and commission fee are also subtracted, as well as occasional special fees for organization work agreed to by the shipper.

Cost of Market Operations The Bureau of Railroad Economics has determined the total marketing cost in the material referred to in Chapter IV (Page 25). It amounted to 2.7 per cent of the price paid by the purchaser in the case of cattle and calves, 3.3 per cent for hogs, and 3 per cent for sheep, compared with the value of the stock.

CHOICE TO PRIME

COMMON TO MEDIUM

GOOD TO CHOICE

INFERIOR TO COMMON

Fig. 29—Market Grades of Steers.

Chapter VII.

GRADING OF LIVESTOCK

Grading Facilitates Business No two animals are alike and in fact the receipts at the public livestock markets show such a variety in respect to type, age, sex, quality and condition, that the general impression is quite confusing from a trade standpoint. A similar condition exists with respect to all other agricultural commodities, and, in order to facilitate business resort is taken to grading the animals in lots of more or less identical character according to as definite standards as possible.

The Service of Grading Grading is a useful service, because it, at a relatively small cost, facilitates and speeds up the commercial transactions at the market. One may even feel safe in buying and selling simply by specifying a certain grade, and, when this grade is established, the seller as well as the buyer has a much more definite idea of what he possesses and also of its money value. In consequence, financing of the trade is made easier and loan and purchase values may be established on the basis of market quotations. Groups of animals properly graded are worth more both to producer and purchaser than the same animals in mixed lots.

Livestock Grades In general, grading and standardizing of grades is more difficult with livestock than with most other commodities. First, the individual variation of the animals is exceedingly great. Secondly, the quality of the receipts varies at different times of the year and in the various sections of the country. A good to choice heavy steer will, in

the spring, probably come from a cornbelt feedlot, and in the fall, from a western ranch. Also, a good steer in the south would probably grade as "common" in Chicago. In recent years considerable effort has been made to standardize grades, and the Bureau of Agricultural Economics of the U. S. Department of Agriculture has organized a system of grading which should be applicable at all markets, thus unifying the standards. The following gives in brief the plan of the grading system. The quality grades are indicated by numbers, as follows: Prime or Fancy, A 1; Choice, 1; Good, 2; Medium, 3; Common, 4; Inferior or Cull, 5. In some classes the inferior grades are termed "cutter," 5, and "low cutter," 6 (Figure 29).

Market Sub-Classes The "Sub-Class" column in the table indicates the use to which the animals are best fitted. Those that display a certain degree of maturity and finish are classed as "slaughter" animals (Figure 30) and are most likely bought directly or indirectly by packers. "Feeders" on the other hand are more or less immature or unfinished animals intended for sale to farmers or commercial livestock feeders who expect to profit from fattening them further before they are returned to the market for slaughter. Frequently packer and feeder buyers are in active competition for light cattle and there is, therefore, no definite borderline between "slaughter" and "feeder" cattle. "Stockers" are immature or thin animals which are not fit for the feedlot and which need additional development on rough feed or pasture. "Milkers" are dairy cattle during the lactation period and "springers" are cows due to calve very shortly. The latter two groups are purchased on the market by farmers who want to buy producing dairy cows.

Fig. 30—Range Cattle Finished in Cornbelt.

HOGS

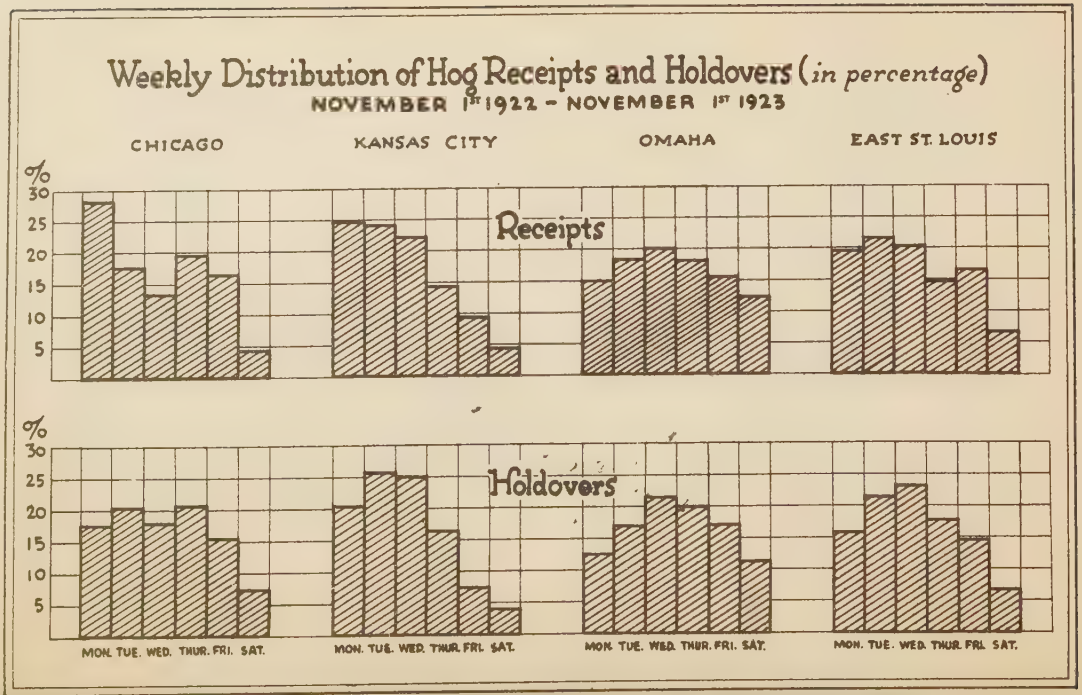
Class	Sub-Class	Use Selection	Weight Selection		Grade
Barrows and Gilts	Slaughter	Butcher and Bacon	Light Light	130-160	1, 2, 3, 4, 5
			Light	160-200	A1, 1, 2, 3, 4
			Med.	200-250	A1, 1, 2, 3, 4
			Hvy.	250 up	A1, 1, 2, 3, 4
	Feeder and Stocker		Light	130-160	1, 2, 3, 4, 5
Sows	Slaughter	Packing	Light	275 down	2, 3, 4, 5
			Med.	275-375	2, 3, 4, 5
			Hvy	375 up	2, 3, 4, 5
	Feeder and Stocker		Light	175 down	2, 3, 4, 5
			Med.	175-250	2, 3, 4, 5
			Hvy.	250 up	2, 3, 4, 5
Stags	Slaughter		Light	300 down	2, 3, 4, 5
			Med.	300-450	2, 3, 4, 5
			Hvy.	450 up	2, 3, 4, 5
Boars	Slaughter		All weights		
Pigs	Slaughter	Roaster	Light	20 down	
			Med.	20-30	
			Hvy.	30 up	
			Light	100 down	1, 2, 3, 4, 5
			Med.	100-115	1, 2, 3, 4, 5
			Hvy.	115-130	1, 2, 3, 4, 5
	Feeder and Stocker		Light	70 down	1, 2, 3, 4, 5
			Med.	70-100	1, 2, 3, 4, 5
			Hvy.	100-130	1, 2, 3, 4, 5

CATTLE

Class	Sub Class	Age Selection	Weight Selection	Grade
Steers	Slaughter	Yearling	Light 800 down	A1, 1, 2, 3, 4, 5, 6
			Med. 800-950	A1, 1, 2, 3, 4, 5
			Hvy. 950 up	A1, 1, 2, 3, 4
		2 yrs. old and over	Light 1100 down	A1, 1, 2, 3, 4, 5, 6
			Med. 1100-1300	A1, 1, 2, 3, 4, 5
			Hvy. 1300 up	A1, 1, 2, 3, 4, 5
	Feeder	All ages	Light 850 down	A1, 1, 2, 3, 4, 5
			Med. 850-1000	A1, 1, 2, 3, 4, 5
			Hvy. 1000 up	A1, 1, 2, 3, 4, 5
	Stocker	All ages	Light 600 down	A1, 1, 2, 3, 4, 5
			Med. 600-750	A1, 1, 2, 3, 4, 5
			Hvy. 750 up	A1, 1, 2, 3, 4, 5
Heifers	Slaughter	Yearling	Light 800 down	A1, 1, 2, 3, 4, 5, 6
			Med. 800-900	A1, 1, 2, 3, 4, 5
			Hvy. 900 up	A1, 1, 2, 3, 4
		2 yrs. old and over	Light 900 down	A1, 1, 2, 3, 4, 5, 6
			Med. 900-1050	A1, 1, 2, 3, 4, 5
			Hvy. 1050 up	A1, 1, 2, 3, 4, 5
	Feeder	All ages	All weights	A1, 1, 2, 3, 4, 5
	Stocker	All ages	All weights	A1, 1, 2, 3, 4, 5
Cows	Slaughter	All ages	All weights	1, 2, 3, 4, 5, 6
	Feeder	All ages	All weights	1, 2, 3, 4, 5
	Stocker	All ages	All weights	1, 2, 3, 4, 5
	Milker	All ages	All weights	1, 2, 3, 4
	Springer	All ages	All weights	1, 2, 3, 4
Bulls	Slaughter	Yearling	All weights	1, 2, 3, 4, 5
		2 yrs. old and over	Light 1300 down	1, 2, 3, 4, 5
			Med. 1300-1500	1, 2, 3, 4
			Hvy. 1500 up	1, 2, 3, 4
	Feeder	All ages	All weights	1, 2, 3, 4, 5
	Stocker	All ages	All weights	1, 2, 3, 4, 5
Stags	Slaughter	All ages	All weights	1, 2, 3, 4, 5, 6
Calves	Slaughter		Light 200 down	2, 3, 4, 5
			Med. 200-300	1, 2, 3, 4, 5
			Hvy. 300 up	1, 2, 3, 4
	Feeder and stocker	All ages	Light 350 down	A1, 1, 2, 3, 4
			Hvy. 350 up	A1, 1, 2, 3, 4

SHEEP

Class	Sub Class	Age Selection	Weight Selection	Grade
Lambs	Slaughter	Spring	All weights	A1, 1, 2, 3, 4, 5
		Lamb	Light 70 down	A1, 1, 2, 3, 4, 5
			Handy 70-80	A1, 1, 2, 3, 4, 5
			Med. 80-90	A1, 1, 2, 3, 4, 5
			Hvy. 90 up	A1, 1, 2, 3, 4, 5
	Feeder	All ages	Light 60 down	A1, 1, 2, 3, 4, 5
			Med. 60-70	A1, 1, 2, 3, 4
			Hvy. 70 up	A1, 1, 2, 3, 4
	Shearer	All ages	Light 70 down	1, 2, 3
			Med. 70-80	1, 2, 3
			Hvy. 80 up	1, 2, 3
Wethers	Slaughter	Yearling	Light 90 down	A1, 1, 2, 3, 4, 5
			Handy 90-100	A1, 1, 2, 3, 4, 5
			Med. 100-110	A1, 1, 2, 3, 4
			Hvy. 110 up	A1, 1, 2, 3, 4
		2 yrs. old and over	Light 100 down	A1, 1, 2, 3, 4, 5
			Handy 100-115	A1, 1, 2, 3, 4, 5
			Med. 115-130	A1, 1, 2, 3, 4
			Hvy. 130 up	A1, 1, 2, 3, 4
	Feeder	Yearling	All weights	A1, 1, 2, 3, 4
		2 yrs. old and over	All weights	A1, 1, 2, 3, 4
Rams	Slaughter	Yearling	All weights	2, 3, 4
		2 yrs. old and over	All weights	2, 3, 4
Ewes	Slaughter	Yearling	Light 90 down	A1, 1, 2, 3, 4, 5
			Med. 90-100	A1, 1, 2, 3, 4, 5
			Hvy. 100 up	A1, 1, 2, 3, 4, 5
		2 yrs. old and over	Light 100 down	1, 2, 3, 4, 5
			Handy 100-120	A1, 1, 2, 3, 4, 5
			Med. 120-140	A1, 1, 2, 3, 4, 5
			Hvy. 140 up	A1, 1, 2, 3, 4
	Feeder	All ages	All weights	1, 2, 3, 4, 5
	Breeder	Yearling	Light 90 down	A1, 1, 2, 3, 4
			Med. 90-100	A1, 1, 2, 3, 4
			Hvy. 100 up	A1, 1, 2, 3, 4
		2, 3 and 4 yrs. old	Light 100 down	A1, 1, 2, 3, 4
			Med. 100-125	A1, 1, 2, 3, 4
			Hvy. 125 up	A1, 1, 2, 3, 4
		5 yrs. and over	Light 100 down	1, 2, 3, 4
			Med. 100-125	1, 2, 3, 4
			Hvy. 125 up	1, 2, 3, 4


Weekly Distribution of Hog Receipts and Holdovers (in percentage)
NOVEMBER 1ST 1922 – NOVEMBER 1ST 1923
CHICAGO
KANSAS CITY
OMAHA
EAST ST. LOUIS
%
30
25
20
15
10
5
Receipts
Holdovers
MON. TUE. WED. THUR. FRI. SAT.

Chapter VIII

VARIATIONS IN LIVESTOCK RECEIPTS

Yearly and Weekly Variations The receipts of livestock at the public markets vary considerably both in numbers and in respect to grades. Most significant are the seasonal variations throughout the year which fundamentally reflect the methods of livestock management in the different sections of the country. The great, and more or less regular, variations in receipts on the different days within the week, on the other hand, are due partly to marketing habits of the producers and partly to practical circumstances connected with the transporting and killing of the animals and the shipment of meats.

Receipts of Cattle and Calves The variation in receipts of cattle and calves within the year is illustrated in Figure 32. from which it is apparent that the autumn is the heavy marketing season, but that another less pronounced peak is noticeable in the receipts about the month of May. The very heavy runs throughout the fall are primarily due to the fact that this is the time when the western range cattle are marketed. A great many of these are sold as stockers and feeders. Considerable numbers of discarded dairy cows also add to the receipts in the fall months. The spring peak, on the other hand, is caused by the marketing of the cattle from the corn-belt feedlots. Along in April and May, also, marketing of spring calves is fairly heavy.

Receipts of Hogs Receipts of hogs, as pictured in Figure 33, are heaviest between November and February. This winter peak reflects the marketing of the previous spring pig crop. Ordinarily another peak is evident during late spring as indicated by the 1922 curve. This peak is caused partly by the marketing of the pig crop from the previous fall and partly by the

marketing of sows whose spring litters have been weaned. Due to the abnormal conditions of the hog market the last two years this typical spring peak has not appeared clearly. Buying of feeder and stocker pigs, furthermore, largely takes place during two periods of the year—in the spring and in the fall.

Receipts of Lambs and Sheep The monthly variation in lamb and sheep receipts is indicated in Figure 34. The slight peak of the curves in May indicates the marketing of the early Kentucky and Tennessee lambs while the native spring lambs from the cornbelt are forthcoming during the summer. A very pronounced peak is evident in the fall when the range country is marketing its spring crop, which to a considerable extent is bought by feeders for fattening purposes. Also numbers of fattened ewes are being shipped at this time of the year. Another, though smaller peak is indicated for the month of January when the fattened lambs from the feedlots, especially

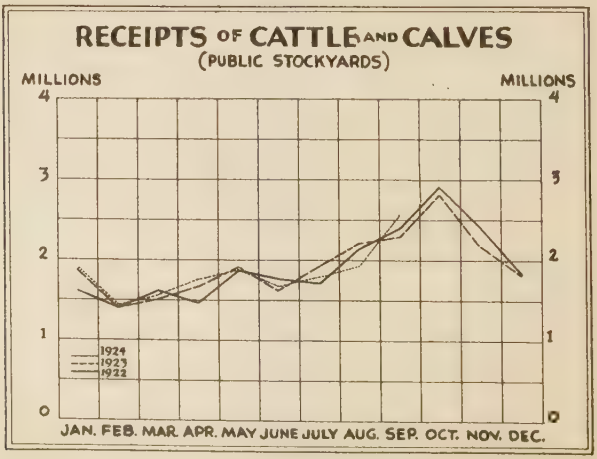
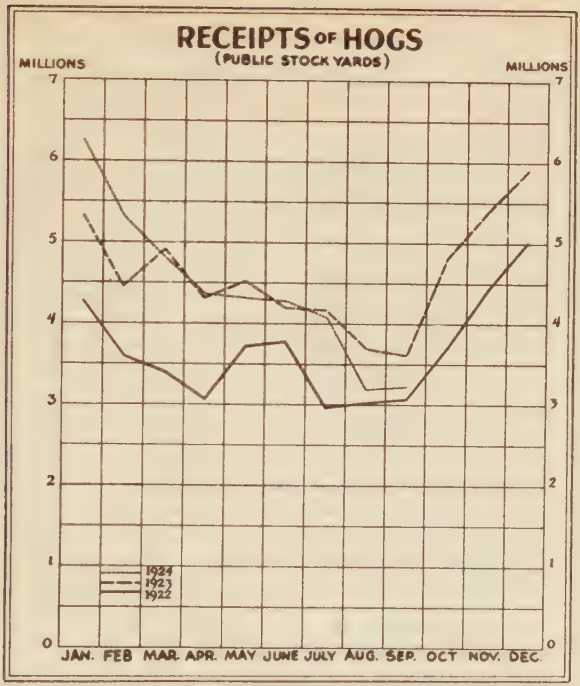


Fig. 32


RECEIPTS OF HOGS
(PUBLIC STOCK YARDS)
MILLIONS
MILLIONS
7
6
5
4
3
2
1
0
1924
1923
1922
JAN. FEB MAR. APR. MAY JUNE JULY AUG. SEP. OCT NOV. DEC.

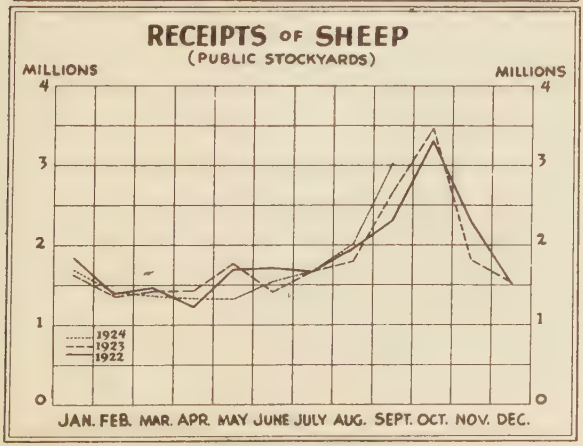

RECEIPTS OF SHEEP
(PUBLIC STOCKYARDS)
MILLIONS
MILLIONS
4
3
2
1
0
1924
1923
1922
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Fig. 33 Fig. 34

in the pulp-feeding regions of Colorado and Nebraska, are marketed.

Weekly Variations The weekly distribution of receipts of hogs, as illustrated in Figure 31, are of an entirely different nature. This graph shows that the receipts are fairly evenly distributed over the first five days of the week with Monday and Thursday leading, in Chicago. On Saturday, on the other hand, receipts are comparatively small and most of the business is the cleaning up of the market before the holiday. A great many producers have distinct preferences for certain days when marketing their animals, in the belief that the market is "better", competition stronger, and prices accordingly higher on these days. Actual analysis of the hog prices at Chicago, Kansas City, Omaha and E. St. Louis, for the period November 1, 1922, to October 31, 1923, failed to substantiate these beliefs (Figure 35). The differences in average price of hogs on the different days of the week were negligible from a practical point of view.

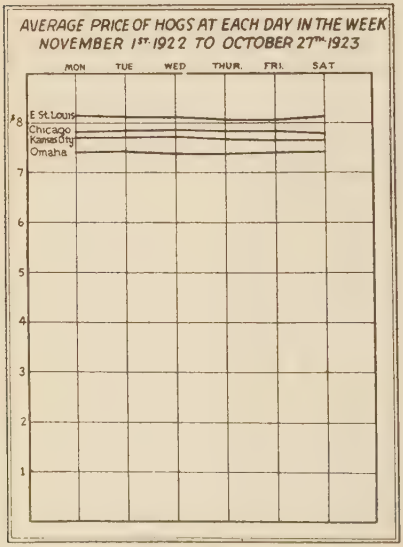


Fig. 35

Chapter IX

GOVERNMENT MARKET ACTIVITIES

Organization of Government Activities

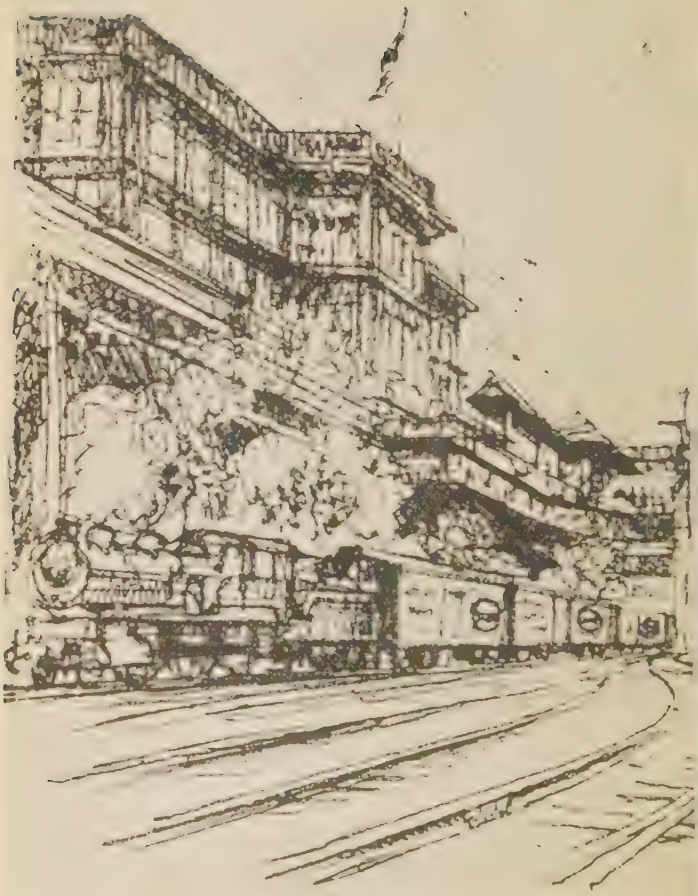
The nature of the livestock and meat business, and its relation to the general welfare and health of the people have proved of such importance that governmental services of various sorts have been established These activities fall under the administration of the U. S. Department of Agriculture but are conducted by three different institutions —the Bureau of Animal Industry, the Bureau of Agricultural Economics, and the Packers and Stock Yards Administration. The first is responsible for the veterinary inspection at the yards and in the packing plants; the second performs the market news service and the livestock information service; and the third administers the regulations dealing with packers and stock yards control.

Fig. 36—Government Veterinary Inspection.

Veterinary Inspection The Bureau of Animal Industry has charge of the veterinary inspection of livestock and meats. All livestock entering public markets pass by an inspector, all animals suspected of infectious disease being removed and quarantined until they can be killed under special supervision. At the inspected packing houses the live animals once more pass a government inspector. During the dressing of the carcasses comes a post-mortem examination at which the internal organs of the animals are examined for tuberculosis and other diseases which may make them unfit for human food (Figure 36). According to the findings the carcasses are stamped—"U. S. Inspected and Passed," "Passed for Sterilization," or "Condemned.". The second group may be sold after proper cooking under government control. The third group is consigned to the grease vat and sold as inedible grease or fertilizer. Also the general hygienic conditions in the packing houses, the treatment of the meats in storage and through the various processes is supervised by government inspectors who insure the public that all meat products coming from an inspected plant are wholesome and fit for human consumption.

Market News Service The Division of Marketing Livestock, Meats, and Wool of the Bureau of Agricultural Economics has representatives at the important livestock markets and also at the wholesale meat markets in Chicago and the big eastern cities. The division maintains a highly efficient market news service by means of a network of leased telegraph wires. The data collected are published in mimeograph and printed form and comprise several daily market reports and advance estimates on livestock receipts for the following day, also weekly detailed reports on the twelve leading livestock markets and monthly reports on sixty-seven public markets. Daily reports of wholesale meat prices are likewise issued.

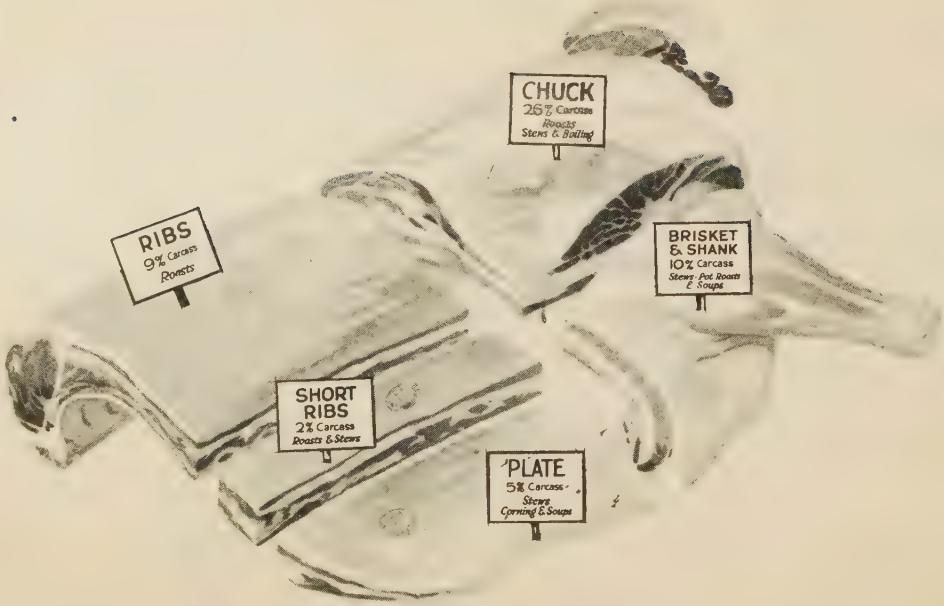
The Wholesale Market



The Hear

From etching by Joseph Pennell

Industry



Wholesale Cuts of Beef — Forequarter

Livestock Estimate Service The Division of Crops and Livestock Estimates publishes information concerning the status and prospects of livestock production. This information is prepared in the form of regular reports of which some of the more important are—the annual estimate of livestock population (January 1); the estimate of number of brood sows on farms (April 1); the condition of livestock (May 1); the pig surveys through rural mail carriers (June 1 and December 1); estimate of calf and lamb crops in the range states (July 1); estimate of stock hogs on farms (September 15); number of cattle on feed in the cornbelt states and the number of lambs in the principal feeding areas of the west (December and January); also other reports covering special areas.

Packers and Stockyards Administration The Packers and Stockyards Administration is directly connected with the office of the Secretary of Agriculture and headed by an assistant to the Secretary. The organization comprises separate divisions dealing with the livestock commission companies, the stockyard companies, and the packers. The activities of the Stockyards Administration are regulatory and are intended to insure and enforce fair trade practices and free competitive conditions. The administration also determines all fees and charges collected from the producers by the commission firms and the stockyards companies.

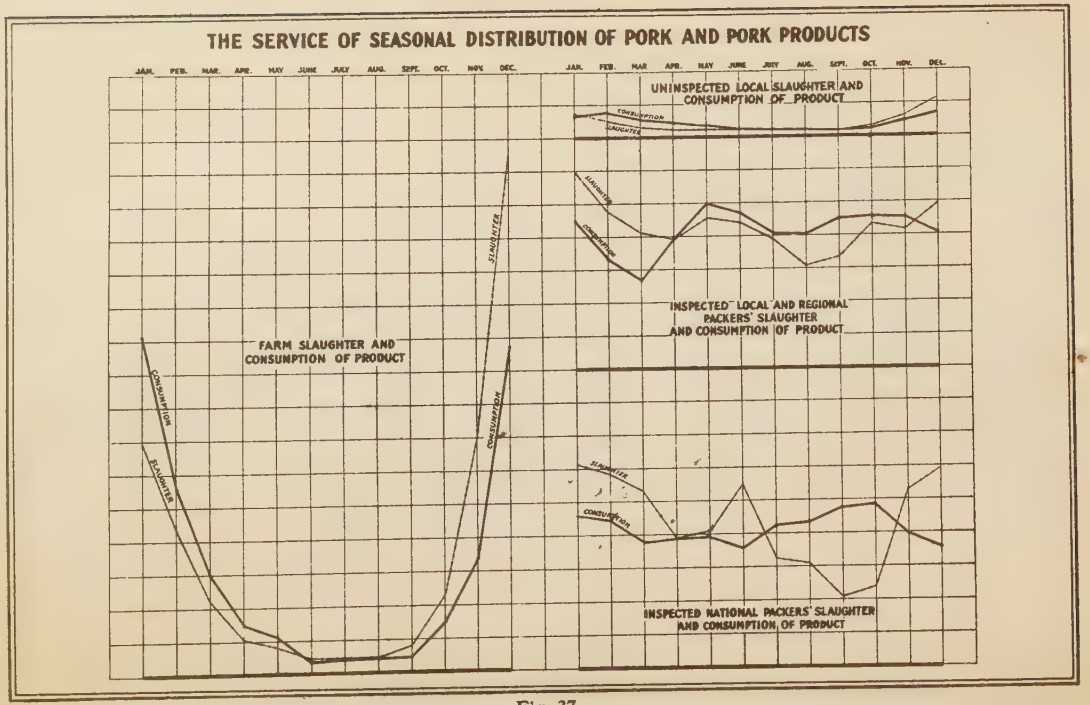

THE SERVICE OF SEASONAL DISTRIBUTION OF PORK AND PORK PRODUCTS
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
FARM SLAUGHTER AND CONSUMPTION OF PRODUCT
SLAUGHTER
CONSUMPTION
CONSUMPTION
SLAUGHTER
UNINSPECTED LOCAL SLAUGHTER AND CONSUMPTION OF PRODUCT
CONSUMPTION
SLAUGHTER
INSPECTED LOCAL AND REGIONAL PACKERS' SLAUGHTER AND CONSUMPTION OF PRODUCT
SLAUGHTER
CONSUMPTION
INSPECTED NATIONAL PACKERS' SLAUGHTER AND CONSUMPTION OF PRODUCT

Fig. 37

Chapter X

THE MEAT PACKING BUSINESS

Four Groups of Slaughtering Agencies In a general way, slaughtering of livestock is performed by four agencies, each one of which is essential to the greatest efficiency of the livestock and meat industries and which together slaughter all livestock and supply the entire population with meat products. These four groups are—farm slaughterers, local butchers, local packers, and national packers.

Farm Slaughterers Farm slaughtering for home use and also for sale of meat is done extensively during the winter season on almost every farm in the country. As a regular year-round business, it is only resorted to in the southeast where farmers still peddle their meat in the town markets. Farm slaughter was historically the first method of developing a meat business, and was a regular procedure in early colonial days. Figure 37 shows that farm slaughter is largely a seasonal affair confined to the winter months, also that the meat is consumed immediately and but little of it is stored for later use. As a general rule, farm slaughtered meat is of inferior quality, the slaughterers having neither the technical skill nor the facilities for preparing the meat in a proper and sanitary way. Furthermore the second best animals of the farm are the ones usually slaughtered, the others being sold for cash.

Local Butchers The local butcher kills only a few head of livestock at a time, in order to supply the demand for meat in his immediate vicinity. Because of the small size of each business no veterinary

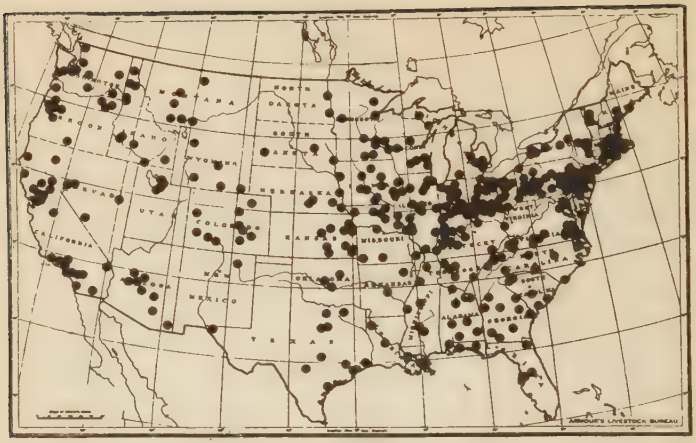


Fig. 38—Location of Cities and Towns in which Packing Plants, primarily doing local business, are operated.

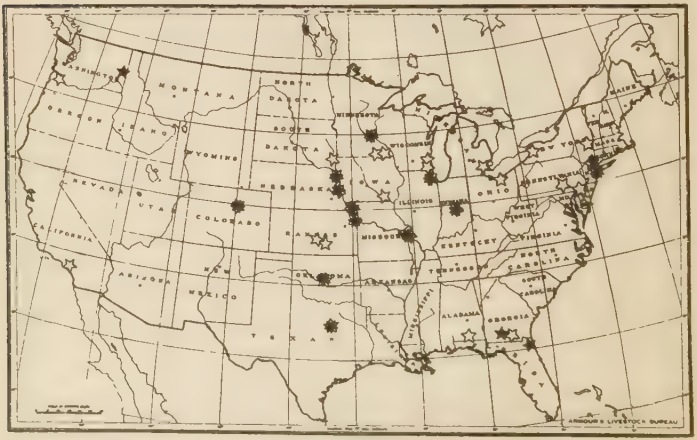


Fig. 39—Location of National Packing Plants.
Black — Armour and Morris Plants.

inspection is possible, and the output of local butchers combines with farm slaughter to make up the bulk of the meat listed in statistical computations as "uninspected." There are, however, significant exceptions to this rule, particularly in the Pacific states where packing houses of considerable size do not have federal inspection because they do not have an interstate trade requiring it. As indicated in Figure 37, the consumption of meat processed by local butchers coincides fairly accurately with its production.

Local Packers The local and regional packer caters to the business in his surrounding territory, ordinarily within a radius of less than a hundred miles (Figure 38). His operations are on a larger scale than those of the local butcher, and exceed them to such an extent that federal inspection is usually arranged for. This is a necessity if any of the meat products are to be salable in states other than the one in which they are manufactured. If at times production is heavier than what can be sold to advantage in the regular territory of the plant, the surplus is consigned to jobbers or sold to wholesalers in Chicago or the big eastern cities. Although some provisions are cured for later sale in local packing houses, the bulk of the business is on the basis of immediate turnover of product. The production and consumption curves, as pictured in Figure 37, therefore, deviate from each other more than those representing farm slaughter and uninspected local slaughter, still the deviation is only moderate in degree.

National Packers The national packer engages primarily in interstate and international trade. His main business is to secure the livestock from those regions in which there is a surplus production (Figure 39), and to ship the products to those regions which cannot be adequately supplied from the immediate surrounding agricultural communities. In order

to engage successfully in this business, it is necessary to conduct operations on a huge scale (Figure 40). Besides plants, the national packer must also be in possession of spacious coolers, refrigerator cars for rail transportation, and a nation-wide or international selling organization with branch houses and local storage plants. The geographic features of the livestock industry, as described in Chapter II, require such a service; in fact, the development of national packing companies made possible the practical dividing of the country into specific agricultural and industrial regions.

Storage of Meat Most packers do some storing of meat, but this business is undertaken on a very large scale by the national packing companies. The basis for this service is the fact that livestock receipts at the markets vary greatly at different seasons. Figure 37 shows that the national packers slaughter much more pork than they sell during the winter and also around the month of June, while their sales exceed slaughter in the fall and sometimes also in the spring. The movement of pork products into and out of cold storage over a period of nine years is shown in Figure 41 in which is also given, for comparison, the corresponding hog receipts curve. It is apparent that cold storage holdings are largest in the spring months and lowest in November, just before the winter run of hogs sets in. Storage is of greatest importance in the provision business, but some beef and lamb is also frozen and stored temporarily when the market seems to warrant it.

Competition Between Local and National Packers In competition with local butchers and packers, the national packers are at a disadvantage because their overhead, due to the facts mentioned, is much larger; also because they have to draw on their supplies from distant regions,

and transportation expenses are, therefore, added; and their turn-over, due to storage, is slower than is the case with local packers. To offset these disadvantages, the national packers resort to the favorable action of three factors—first, they operate on a larger scale, permitting them to do business on smaller profits per dollar of sale than the local packers are able to; secondly, they secure additional income through the development of numerous by-product industries; and thirdly, they can place their products on the particular markets where they will bring the highest price, while the local packer is largely restricted to his immediate selling territory.

Utilization of By-Products Ordinarily the smaller packer can only utilize the hides, fats and greases, but in the big packing plants, the supply of livestock is sufficient to make it worth while to preserve every bit of the animal for use as raw product for the manufacture of a great variety of goods. The following list gives some few examples of by-product utilization—soap, cosmetics, glycerine, glue, bone-meal, combs, fertilizer, leather goods, brushes, curled hair, wool, sausage containers, musical strings, surgical ligatures, oleomargarine (Figure 42), meat and blood meal, tankage and many pharmaceutical preparations.

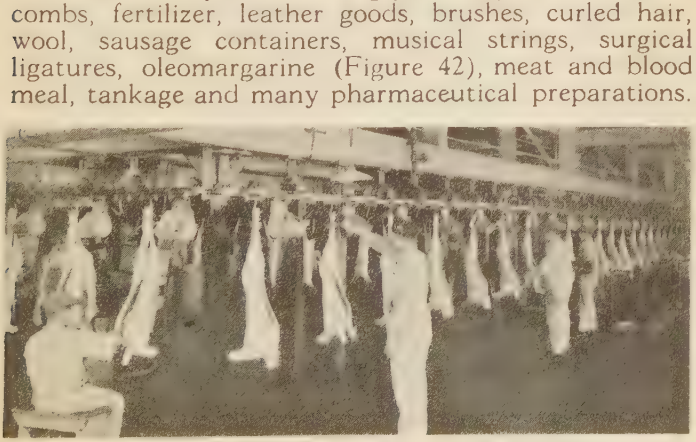


Fig. 40—Scene from a Sheep Dressing Floor.

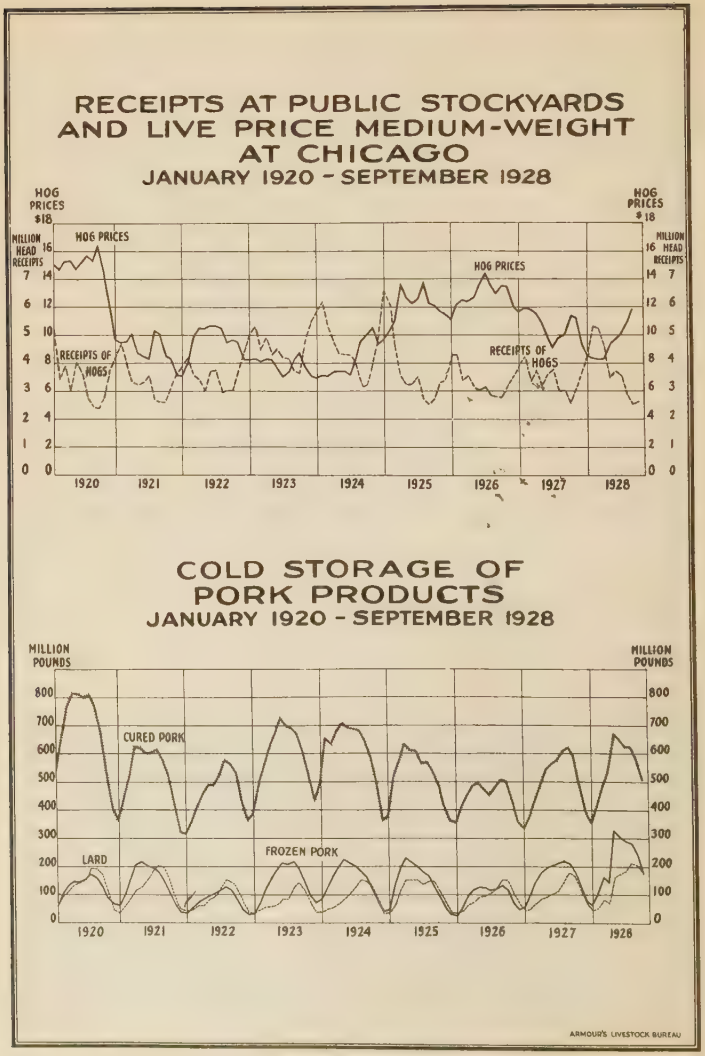

RECEIPTS AT PUBLIC STOCKYARDS AND LIVE PRICE MEDIUM-WEIGHT AT CHICAGO
JANUARY 1920 - SEPTEMBER 1928
HOG PRICES
$18
MILLION HEAD RECEIPTS
HOG PRICES
RECEIPTS OF HOGS
1920
1921
1922
1923
1924
1925
1926
1927
1928
COLD STORAGE OF PORK PRODUCTS
JANUARY 1920 - SEPTEMBER 1928
MILLION POUNDS
CURED PORK
LARD
FROZEN PORK
ARMOUR'S LIVESTOCK BUREAU

Fig 41

Services of the Packing Industry The services of the packing industry are of a various nature. Most conspicuous is the manufacturing service which includes slaughtering, curing and other processing. Another is that of distribution—over space to all parts of the country where there is a demand for all meat products, and over time from periods of surplus production to periods of deficiency—storage. A third service is that of standardization and packaging of products as outlined in Chapter XI. A fourth and very important service, which is generally not appreciated, is that of financing the livestock industry from the time the livestock is ready for slaughter until the retail market pays for the meat products. In the intermediate span of time, processing and distribution have to be performed, and while the packer pays the producer cash for his livestock at the market, he does not get his money back till weeks or months later. In other words, the packing industry is the financing agent for the livestock industry.

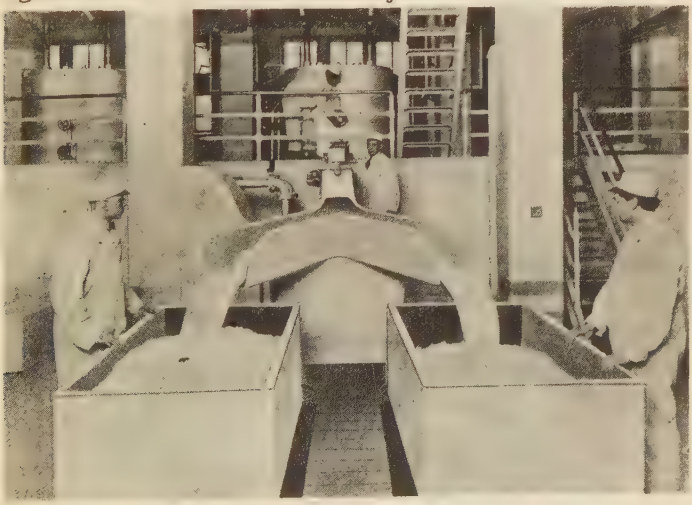


Fig. 42—Manufacture of Oleomargarine in a Packing Plant.

Fig. 43—Beef Cooler in a Wholesale Market

Chapter XI

WHOLESALE CUTS OF MEAT

Grading and Standardizing Meats Although carcasses may be cut up and sold in somewhat different ways the so-called "Chicago style" has become more or less generally adopted in the attempt to grade and standardize meat products. The desirability of standardizing meat cuts is based on the same reasons as those set forth for grading and standardization of livestock (Chapter VII). The following discussion is limited to the standard cuts suggested by the Bureau of Agricultural Economics of the U. S. Department of Agriculture, based on Chicago trade practices.

Wholesale Cuts of Beef During the dressing process the beef carcasses are split in sides (Figure 43) and before shipment these are further cut between the twelfth and thirteenth ribs, into forequarters and hindquarters, leaving one rib on the hindquarter. On the average the hindquarters are slightly heavier than the forequarters. At the wholesale meat markets the quarters are further subdivided into wholesale cuts (see pages 58 and 83). From the forequarter is cut the *chuck* including the shoulder part and the upper part of the first five ribs, also the neck; the *brisket* with the breast bone and the lower end of the first five ribs; the *foreshank*, which is usually cut off from the brisket at the shoulder joint; the *rib*, the cut over the back between the sixth and twelfth ribs, both included; and the *plate*, the corresponding lower part from which the *short ribs* may be removed. From the hindquarter the *round* and *rump* are cut off at the pelvic joint and the rest is divided horizontally into the *loin* and the *flank*. The loin may be further subdivided

into *short loin* and *loin end*. From the front end of the short loin the club steaks are obtained, from the hind end, the porterhouse steaks; while the loin end produces the sirloin steaks.

Wholesale Cuts of Veal Veal may be sold in whole carcasses or divided like beef into sides, forequarters and hindquarters, or more often into *fore saddles* and *hind saddles*, the saddles being the unsplit carcass cut crosswise between the twelfth and thirteenth ribs. The wholesale cuts (Page 84) are similar to those used for beef except that frequently shoulder (including only three ribs), breast and shank are sold together as *chuck*. The rib cut from the fourth to the twelfth ribs is termed the *hotel rack*. The cut corresponding to the beef round is called *leg*.

Wholesale Cuts of Lamb Lamb is sold exactly like veal either in carcasses or divided into fore saddles and hind saddles. Also the wholesale cuts (see pages 97 and 98) are identical with those described for veal. Often the rack is cut off from the fore saddle and the rest including neck, shoulder and breast is termed *rattle*.

Wholesale Cuts of Pork Only very few hogs are sold in carcass form, the one significant exception being the Wiltshire sides used in export trade. A Wiltshire side is simply the whole side properly trimmed with head and feet off. Another popular export cut is the Cumberland side which is similar to the Wiltshire side except that the long ham is removed. For the domestic trade the hogs are practically always divided into wholesale cuts before shipment as fresh meat or before curing. Although there are a great variety of ways in which this may be done the following is the most common and typical—the *shoulder* may be sold without further subdivision, but more frequently it

is divided by a horizontal cut into an upper and a lower piece. The upper piece is further separated into the outer layer of fat termed the *clear plate* and the inner meaty part, the *Boston butt*. The lower piece is trimmed to a *picnic shoulder*. The middle of the carcass is first separated into an inner and an outer layer, the first yielding the *pork loin* and *spare ribs*, the second, the *fat back* and *bacon belly*. The *ham* is trimmed in various ways according to the use for which it is intended (See Page 111).

Specifications and Brands The establishment of market classes and grades of meats has encountered considerable difficulty because of the nature of the product. Certain pork products, however, for a great many years have been so standardized that trading in them has been conducted at provision exchanges only on the basis of generally accepted specifications. The public also has been accustomed to buy provisions on the basis of brands which represent rather standardized grades. "*Star*" for instance, is the Armour brand for the highest grade, "*Shield*" and "*Banquet,*" for the second, etc. (Figure 45).

Beef grades have been standardized to a certain extent and government inspectors have graded beef carcasses prime and choice at the request of individual packers. During the first year (1927) 44,000 prime and choice and 4700 good beef carcasses were given government grading. In some sections packers have established their own grading using the words "prime," "choice" or "good" with their own brand name. Every carcass is stamped in a systematic manner according to the grade determined. Some authorities hold that this beef grading may be extended to wholesale cuts and thus establish grade standards for other packing house products through this example. Beef grading may prove to be, after the experimental stage is over, a definite step forward in meat merchandising methods.

Chapter XII

THE BOARD OF TRADE

The Board of Trade a Market for Provisions The relative uniformity of standard pork products makes them adaptable to trade on provision exchanges by specifications as to weight, cure and quality. Such transactions take place daily at the Chicago Board of Trade, where trading in grain is also performed on a huge scale. The Board of Trade offers a constant market for provisions, just as the livestock market assures the producer of livestock an opportunity to sell his stock. Also, just as the livestock market automatically registers livestock values, so does the Board of Trade register provision values expressed in the prices at which transactions are actually performed.

Organization and Equipment of Board of Trade The Board of Trade is a corporation with a membership of about 1,600. The members deal in grain or provisions on their own behalf or as commission brokers for outside sellers and buyers. The integrity of trade practices is guaranteed by the Board through rigid regulations; it also determines the commission fees. The actual trading takes place on the floor of the Board of Trade Building where there are four circular *pits;* the wheat-pit, corn-pit, oat-pit, and provision-pit. There are also facilities for posting market information and for receiving and sending of telephone and telegraph messages (Figure 44).

Spot and Future Trading The sales are either *spot* or *future*. The first means a cash transaction involving a product actually at hand. Future trading, on the other hand, means sale of deferred contracts. In the meat trade it involves

obligations to deliver a certain quantity of provisions at a definite time and price. The trader does not, at the time of purchase, pay his broker the full price but only a so-called *margin* which may vary, according to the degree of activity in the market and the financial responsibility of the purchaser. This margin is intended to insure the broker against a loss if the value of the contract should change.

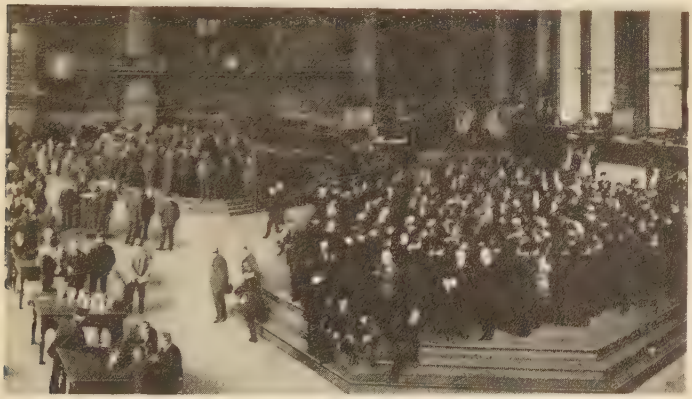


Fig. 44—Scene from the Chicago Board of Trade.

Bears and Bulls A *bear* is a trader who anticipates a decline in the market and by selling his future holdings contributes to a decline in prices. He expects to make a profit by buying new contracts at lower price levels, to fulfill his obligations for deliveries. When he has sold enough so that he has obligations without corresponding contracts for delivery to him, he is *short*. A *bull* on the other hand is a trader who expects prices to rise and therefore buys futures, thus further stimulating the market. Having secured more contracts then he needs to fulfill his obligations, he is *long*. Bearish and bullish activities are usually going on simultaneously and the keenest speculator is the one who comes out with a profit.

Hedging Organizations or individuals run the risk of loss through price fluctuations, if they hold goods or make contracts for future delivery of goods not actually on hand. Such agencies may insure themselves against loss by selling futures corresponding in volume to the goods they hold, or by buying futures corresponding to their contract sale. If prices go up or down, a loss or gain in holdings or contracts will be offset by an equivalent gain or loss in the transactions in futures, thus maintaining the margin of profit secured in the original transaction. When the holdings are sold for cash the contracts for future delivery are bought back at the going price, or if contracts for delivery have been undertaken, the corresponding futures are sold as the contract deliveries are made. Such transactions are called *hedging* and constitute a simple form of insurance against price fluctuations, the premium being the fees connected with the buying or selling on the Board of Trade.

Future Prices as Indicators of Future Market Conditions Future prices registered at the Board of Trade are very close indicators of the prices which will actually be current at the particular time at which the future matures. Statistical studies from this Bureau reveal that the relationship between future prices and the actual cash prices at the given time is so close as to indicate that the joint judgment of all buyers is exceptionally dependable. Board of Trade quotations therefore are valuable price indicators to the men engaged in the packing business as well as in the livestock industry.

Chapter XIII

PRODUCTION AND CONSUMPTION OF MEATS

The Greatness of the American Meat Industry The total annual production of meats and lard in this country, since the year 1907, is presented in Table I. In 1923, it was the highest on record, almost 21 billion pounds. The figures include the products of the farm slaughterer, the local butcher, the local packer and the national packer, combined. Table II, moreover, contains corresponding data limited to the products from packing houses doing interstate business and therefore having government inspection. It is evident that roughly speaking two-thirds of the volume of meat produced in this country is government inspected.

Domestic Consumption of Meats Table III, combined with the information in the Chapter on exports shows the disposal of the meat produced. The beef, veal, mutton and lamb are almost entirely consumed in this country, while a considerable proportion of the pork and lard is exported and sold abroad (Figure 56). Table IV gives the per capita consumption of meat over a period of years, it indicates that the average American consumed 150 pounds of meat and 15⅓ pounds of lard in 1924. Well over half of the meat consumed is pork and the proportion of the meat diet made up of pork seems to be regularly increasing. On the other hand, consumption of beef and lamb is slowly decreasing.

Regional Variations in Meat Consumption The production of meat varies widely in the different sections of the country both absolutely and in proportion to human population (Chapter II). In the same way considerable geographic variation in meat consumption is

TABLE I:—TOTAL PRODUCTION OF MEATS AND LARD

YEAR	BEEF	VEAL	MUTTON, LAMB	PORK	ALL MEATS	LARD	LARD and MEATS
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
1907	7,192	589	560	6,333	14,680	1,777	16,457
1908	6,642	573	559	6,617	14,396	1,790	16,186
1909	7,041	628	603	6,024	14,362	1,504	15,866
1910	6,703	632	599	5,649	13,648	1,434	15,082
1911	6,466	597	732	6,596	14,454	1,673	16,127
1912	5,888	598	779	6,407	13,749	1,626	15,375
1913	5,881	491	731	6,622	13,729	1,681	15,410
1914	5,606	443	712	6,530	13,299	1,657	14,956
1915	5,779	427	622	6,971	13,816	1,775	15,591
1916	6,075	535	608	7,386	14,626	1,849	16,475
1917	6,641	661	473	6,139	13,932	1,557	15,489
1918	7,279	764	493	7,854	16,405	1,983	18,388
1919	6,758	803	603	7,832	16,006	2,039	18,045
1920	6,713	797	532	7,455	15,511	2,056	17,567
1921	6,163	747	626	7,645	15,182	2,114	17,296
1922	6,706	792	535	8,260	16,295	2,357	18,652
1923	6,873	862	571	9,595	17,912	2,783	20,695
1924	7,065	925	589	9,279	17,867	2,746	20,613
1925	7,146	1001	599	8,255	17,005	2,223	19,228
1926	7,458	960	643	8,181	17,245	2,324	19,569
1927	6,826	867	645	8,533	16,872	2,356	19,228

TABLE II.—INSPECTED PRODUCTION OF MEATS AND LARD

YEAR	BEEF	VEAL	MUTTON, LAMB	PORK	ALL MEATS	LARD	LARD and MEATS
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
1907	4,302	192	431	3,763	8,690	1,137	9,827
1908	3,917	185	427	4,135	8,666	1,171	9,837
1909	4,159	210	465	3,545	8,402	886	9,288
1910	4,024	215	462	3,112	7,836	792	8,628
1911	3,953	207	568	3,977	8,727	1,010	9,737
1912	3,699	214	607	3,802	8,349	965	9,314
1913	3,563	176	568	3,958	8,267	1,006	9,273
1914	3,568	161	554	3,815	8,101	969	9,070
1915	3,942	167	481	4,253	8,849	1,081	9,930
1916	4,319	219	471	4,660	9,677	1,159	10,836
1917	5,124	295	363	3,650	9,438	926	10,364
1918	5,597	351	380	4,987	11,319	1,260	12,579
1919	4,736	377	469	4,991	10,577	1,323	11,900
1920	4,365	370	413	4,539	9,689	1,321	11,010
1921	4,082	366	493	4,730	9,671	1,379	11,050
1922	4,569	395	417	5,157	10,539	1,575	12,114
1923	4,682	443	446	6,351	11,923	1,971	13,894
1924	4,825	499	455	6,057	11,837	1,923	13,760
1925	4,935	541	467	5,235	11,179	1,452	12,631
1926	5,223	530	501	5,099	11,354	1,513	12,867
1927	4,783	493	502	5,495	11,272	1,557	12,829

TABLE III.—TOTAL DOMESTIC CONSUMPTION OF MEATS AND LARD

YEAR	BEEF	VEAL	MUTTON, LAMB	PORK	ALL MEATS	LARD	LARD and MEATS
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
1907	6,779	589	558	5,628	13,560	1,183	14,743
1908	6,367	573	557	5,884	13,386	1,203	14,589
1909	6,835	628	601	5,455	13,585	1,042	14,627
1910	6,561	632	596	5,267	13,121	1,052	14,173
1911	6,342	597	729	6,046	13,777	1,063	14,840
1912	5,807	598	773	5,873	13,128	1,068	14,196
1913	5,852	491	725	6,077	13,149	1,100	14,249
1914	5,722	448	724	6,102	13,004	1,192	14,196
1915	5,414	428	622	5,908	12,389	1,281	13,670
1916	5,639	536	613	6,055	12,865	1,368	14,233
1917	6,083	662	473	5,037	12,273	1,195	13,468
1918	6,522	765	486	5,684	13,472	1,374	14,846
1919	6,474	808	607	5,755	13,654	1,292	14,946
1920	6,713	805	588	6,437	14,557	1,416	15,973
1921	6,171	751	639	6,886	14,448	1,223	15,671
1922	6,643	797	545	7,260	15,247	1,558	16,805
1923	6,850	864	576	8,338	16,639	1,707	18,346
1924	6,993	929	589	8,492	17,012	1,749	18,761
1925	7,166	1004	597	7,794	15,565	1,522	18,087
1926	7,429	964	641	7,689	16,726	1,584	18,310
1927	6,884	874	645	8,120	16,526	1,634	18,160

TABLE IV.—PER CAPITA CONSUMPTION OF MEATS AND LARD

YEAR	BEEF	VEAL	MUTTON, LAMB	PORK	ALL MEATS	LARD	LARD and MEATS
	pounds	pounds	pounds	pounds	pounds	pounds	pounds
1907	77.5	6.7	6.4	64.4	155.1	13.5	168.6
1908	71.5	6.4	6.3	66.1	150.3	13.5	163.8
1909	75.4	6.9	6.6	60.1	149.8	11.5	161.3
1910	71.1	6.8	6.4	57.1	142.2	11.4	153.6
1911	67.7	6.4	7.8	64.5	147.1	11.3	158.4
1912	61.1	6.3	8.1	61.8	138.1	11.2	149.3
1913	60.6	5.1	7.5	63.0	136.2	11.4	147.6
1914	58.4	4.6	7.4	62.3	132.7	12.2	144.9
1915	54.5	4.3	6.3	59.5	124.8	12.9	137.7
1916	56.0	5.3	6.1	60.1	127.7	13.6	141.3
1917	59.5	6.5	4.6	49.3	120.1	11.7	131.8
1918	63.0	7.4	4.7	54.8	130.1	13.3	143.4
1919	61.6	7.7	5.8	54.8	130.0	12.3	142.3
1920	63.1	7.6	5.5	60.5	136.8	13.3	150.1
1921	56.9	7.0	5.9	63.5	133.3	11.3	144.6
1922	60.4	7.3	5.0	66.1	138.8	14.2	153.0
1923	61.3	7.7	5.2	74.7	149.0	15.3	164.3
1924	61.5	8.2	5.2	74.7	149.6	15.4	165.0
1925	62.1	8.7	5.2	67.6	143.6	13.2	156.8
1926	63.4	8.2	5.5	65.7	142.8	13.5	156.3
1927	58.0	7.4	5.4	68.5	139.3	13.8	153.1

manifest. A government estimate from 1919 is presented in Table V which indicates the relative meat consumption in different sections of the country and also in the urban and rural districts, separately. It is evident that meat consumption, on a per capita basis, is heaviest in the middle west and lightest along the north Atlantic seaboard between Pennsylvania and Maine. Beef consumption is heaviest in the west; mutton consumption, in the west and in the northeast; pork consumption, in the south. Meat consumption in the rural districts is slightly heavier than in the towns and cities, but this is entirely due to a very much heavier consumption of pork, since much smaller quantities of beef, veal and mutton are consumed in the rural districts than in the urban.

Regional Demands for Special Grades of Meat The differences in meat consumption between sections of the country and sections within these are not only manifest in the volume consumed but also in the kind and quality desired. The big cities, particularly in the east, are big outlets for meats of the higher qualities quoted at correspondingly high prices. The south, on the other hand, where almost the entire local meat production is of very low grade, offers only a market for the cheaper classes of meat. Within a single big city all various types of demand may be found. The meat markets in the better residential districts are supplied with choice meats at relatively high prices, while markets in the poorer sections want cheaper meats for their customers. Where there is a considerable foreign population a further specialization in market demand may be found. Italians, for instance, prefer special grades of dry sausage and ham, while Germans, Russians and Jews have other preferences. Detailed knowledge of meat consumption within the country, city and district is essential to proper and efficient distribution of meat products.

TABLE V.—ESTIMATED PER CAPITA MEAT CONSUMPTION BY REGIONS, 1919

Class	Total	Beef	Veal	Mutton	Pork
Urban					
North Atlantic	149.9	64.0	13.5	10.9	61.5
North Central, east	154.0	75.6	11.6	7.3	69.3
North Central, west	163.2	77.5	11.7	6.8	67.2
South Atlantic	142.4	55.1	5.7	5.4	76.3
South Central	158.9	66.1	4.4	8.7	79.7
Western	166.6	76.2	16.3	13.6	11.2
Total	155.8	68.3	11.8	9.3	66.3
Rural					
North Atlantic	150.8	47.1	10.7	7.6	85.5
North Central, east	171.1	48.3	7.2	5.8	109.9
North Central, west	180.7	57.4	6.3	3.8	113.1
South Atlantic	153.7	28.5	3.2	4.4	117.6
South Central	158.5	28.6	1.7	6.9	121.3
Western	171.3	64.7	9.3	15.8	81.5
Total	163.2	41.6	5.4	6.5	109.7
Total Population					
North Atlantic	150.1	59.6	12.8	10.0	67.7
North Central, east	167.3	62.7	9.5	6.6	88.5
North Central, west	174.9	64.1	8.1	4.8	97.8
South Atlantic	150.9	35.2	3.8	4.7	107.1
South Central	158.6	36.3	2.3	7.3	112.8
Western	169.0	70.3	12.7	14.7	71.3
Total	159.7	54.0	8.4	7.8	89.6

Fig. 45—"Star" and "Shield" hams, illustrating grading, branding and packaging. Note plumper shape and shorter shank on the better grade.

Fig. 46—Refrigerator Train.

Fig. 47—Loading Refrigerator Cars.

Chapter XIV

WHOLESALE MARKETING OF MEATS

The Refrigerator Car The refrigerator car is the backbone of the entire system of wholesaling meats. It was first constructed in the 70 s and marked an epoch in the history of the meat business. Before that time the trade was largely confined to cured pork and barrelled beef and was a seasonal business limited to the cold winter months, when transportation of perishable products could be performed successfully. Nowadays the refrigerator car makes possible a nation-wide trade in fresh meats. All packing houses of any size own or lease refrigerator cars, the large packers possessing thousands of them, for the prompt distribution of their meat products (Figure 46).

Construction of the Refrigerator Car The modern refrigerator car is a quite expensive equipment costing about $3,000. In fact, it was the lack of sufficient capital on the part of the railroads which caused the packers to build their own car equipment. In each end of the car four tanks are located which are filled with a mixture of ice and salt and over which the air circulates for cooling. The car itself is insulated so that the meat, hanging in the roof of the car or placed in boxes on the floor, may be kept at a uniformly low temperature, insuring that it will arrive at the point of destination in the same condition as when it was placed in the car (Figure 47).

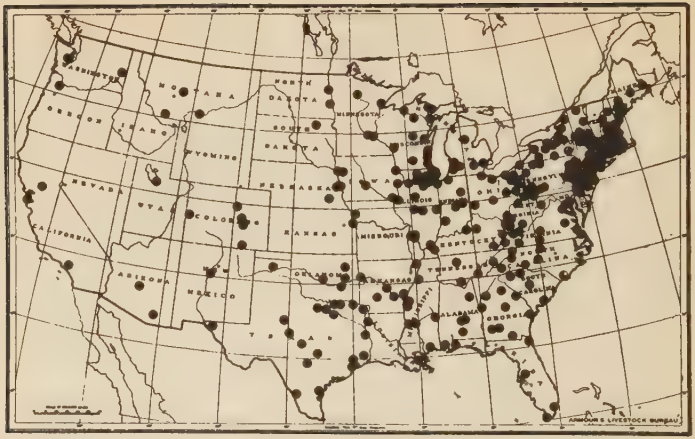
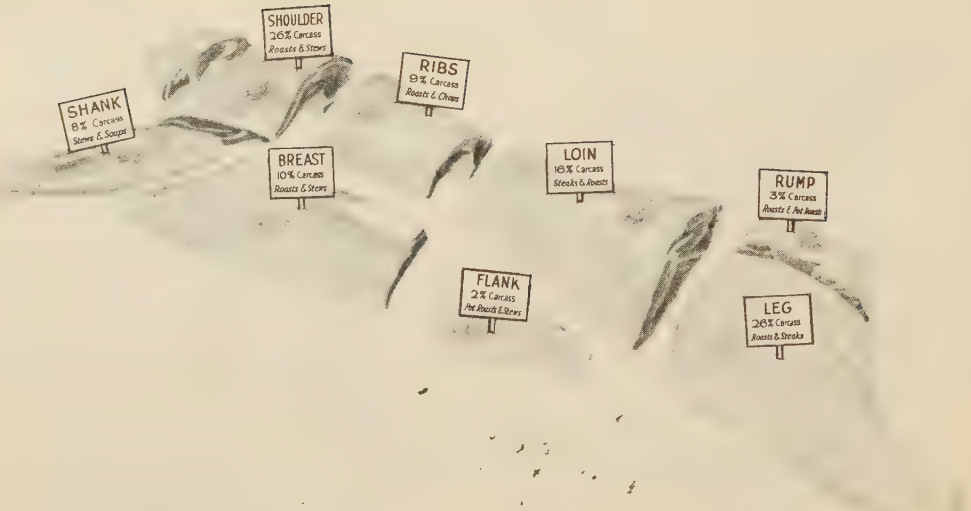


Fig. 48—The Armour and Morris Branch House System. The Scale of the map does not permit the number of houses in the East to stand out separately.

Fig. 49—Branch House.

Wholesale Cuts of Beef — Hindquarter



Wholesale Cuts of Veal —

Operation of Car Lines The packers who own their refrigerator cars lease them to the railroads on a mileage basis and in turn pay the railroads the ordinary freight charges for transporting the meat. These charges are fixed by the Interstate Commerce Commission and require a minimum weight of product in each haul. These minima are 21,000 pounds for fresh meat and 30,000 pounds for cured products. The railroads are entitled to load the empty cars with suitable freight on the return trip and are also guaranteed the same total mileage with full loads as with empty return shipments. The railroads maintain icing stations at intervals of 200 to 300 miles along the road and charge the packers for re-filling the ice tanks when necessary during the haul.

Branch Houses The ideal way of wholesaling meat outside of the immediate neighborhood of a packing house is through refrigerated branch houses. As these, however, require a rather big investment, they can only be established in towns or territories with a population sufficient to develop a considerable volume of trade. The majority of them are therefore located in the industrial states of the east, or in the deficient-producing states of the south (Figure 48). A typical branch house includes offices, meat coolers and frequently equipment for curing and smoking pork products and for making sausages (Figure 49).

Organization of Branch Houses Groups of twenty to thirty branch houses are under the direction of a superintendent who is the sales director of the territory and also the business manager of the physical properties and equipment, the value of which often amounts to several million dollars. Each branch house is headed by a manager. The branch house has technical help where some processing of meats is performed; in fact, when better prices can be

received for freshly packaged or processed products a part of the ordinary activity of the packing plant is frequently transferred to the branch house. For the sale of packing house products a staff of salesmen is employed, most of whom do general work, but a few are also specialty salesmen devoting their efforts to the sale of particular products like canned meats, soap, etc. The salesman solicits orders by calling regularly on customers or by using the telephone. The cost of branch house service is quite considerable and amounts on the average, to over a dollar per hundredweight of product sold

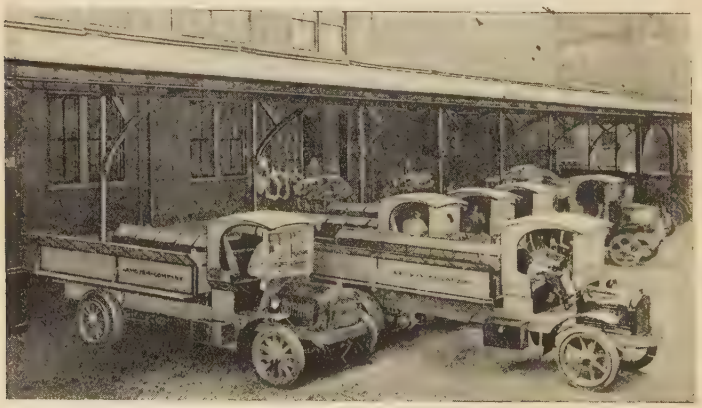


Fig. 50—Truck for Meat Delivery.

Car Routes In towns or districts where there is not a sufficiently large market to establish a permanent branch house the trade is covered by car routes (Figure 51). These are either managed from the packing plant at which they start or from the branch house to which they go, after having made in

Fig. 51—The Armour and Morris Car Route System. Figures indicate number of cities and towns served in each state from each plant. The location of the plants marked with a star. Branch house car routes are not included.

termediate stops enroute. In the latter case the branch house takes the products remaining in the car after the deliveries have been made at the route points, thereby making full loading possible. The sales for car routes are made before the car starts, by salesmen who travel along the route and solicit orders to be filled by the car, which covers the territory once or twice a week. The unloading is done by the train crew, no special attendant traveling with the car.

Sale Through Brokers Packing houses not having their own branch house systems or wanting to do business in districts where it would not pay them to maintain such houses or send route cars regularly, consign products to local brokers who possess the necessary equipment for handling meat products. The brokers receive regular price quotations from the packers and sell the products on the basis of a commission ranging from 1 to 5 percent according to the nature of the product. This way of wholesaling meats is, however, rapidly diminishing in importance

Wholesalers and Jobbers Certain firms operate on much the same plan as brokers, insofar as the physical distribution of product is concerned, but instead of operating on a commission basis, actually buy and sell goods. Hotel and institutional supply houses come under this class, as do certain large export houses. Jobbers often act as supply agents for a number of retail stores in a given locality, buying the grade and assortment of products they find each retailer needs. Such jobbers usually are limited by their customers in the quantities they buy, but use their own judgment on prices, maintaining their trade by supplying the retailer with meats he can move at a profit.

Chapter XV

RETAIL MARKETING OF MEATS

Demand for Retailing The final link in the chain from producer to consumer is the retail store. As the old custom of the housewife going to a central market to buy her household supplies has disappeared and she instead expects to be able to make her purchases almost at the corner or even over the telephone, the service of the retail market has come into increasing prominence. Besides the typical retail markets a number of institutions buy packing-house products and can therefore be included in the following discussion, although they, in a way, are intermediary between wholesale and retail outlets.

Retail Outlets Briefly, there are three major retail outlets for packing-house products—the retail meat market, the retail grocery and delicatessen store, and the bakery. To these may be added the following institutions — clubs, hospitals, hotels, restaurants, cafes, railroad companies (for dining cars), and others.

Meat Retailers The retail meat dealers, of whom there are 100,000 in the country, handle packing-house products exclusively and especially regular meats. These meat markets buy approximately 65 per cent of the entire supply of packing-house products.

Retail Grocers The retail grocers, in this country, number about 335,000 and handle a great variety of products. About 85 per cent of them sell meats or meat products, in some form or other.

Fig. 52—Retail Market.

They and the delicatessen stores sell mostly cured, canned and ready-to-serve meats, but they also carry sausages, lard, etc. The present day grocer sells more refinery products on the aggregate than the strictly meat markets (Figures 52 and 53).

Fig. 53—Selection of Packing House Products for Delicatessen Store.

Bakers The third group of buyers of packing-house products comprises the bakers. While they are not strictly retailers many of them perform retail manufacture. The main products sold to the baking trade are lard and shortening, but also oleomargarine, cooking oil and other ingredients used in baking are included. In recent years the baking industry has undergone an interesting development, inasmuch as most of the bread baking is now in the hands of so-called wholesale bakers who own or supply large numbers of retail stores. These large concerns buy mainly refinery products. On the other hand small bakers more and more limit themselves to baking cakes, pastries, pies,

etc. Related groups of buyers are biscuit manufacturers, pie bakers, and the confectionery industry. All of these take refinery products, as well as some of the unrelated lines including condensed milk.

Institutional Trade Of considerable importance, particularly in the sale of fresh meats, is the club, hospital, hotel, restaurant and dining-car trade. Most of these organizations have special meat buyers who are experts on selecting meats for their particular needs. The better part of this trade is of great importance as an outlet for the higher grades of meat, particularly for Christmas beef, Easter lamb and other fancy stuff.

Cost of Retailing Retail marketing is the most expensive transaction in the process of marketing, because of the relatively limited volume of business done by each unit and the many important services required. The greatest item is the expense for salaries and wages, because of the fact that each man can only handle a rather small volume of business in a day, hence it takes about 10 per cent of the retail price to cover the expense for help. Other important outlays are for store rent and delivery service. Most housewives want to be relieved of the trouble involved in carrying purchases home, and they seldom realize that they must pay for this additional service in the price of the goods.

Another item of cost which is seldom appreciated is the carrying of accounts with the customers. Many of these want weekly or monthly bills and even if these were always honored when due, the system involves a cost in loss of interest which must be charged against the products and paid by the customers. The fact that about one-fifth of the price paid by the consumer is absorbed by expenses in operating the retail market

has encouraged attempts at more economic methods of distribution, such as chain stores, and, on the Pacific coast, retailing by the packers. It seems, however, that the present system of retailing, even if costly, is the one which most efficiently performs the services the modern housewife wants and is willing to pay for.

Harvard University has published a report of the expenses of 471 retail meat markets with the following results:

Salaries and Wages	10.0	per cent
Advertising	0.3	per cent
Boxes and Wrappings	0.6	per cent
Delivery	1.2	per cent
Office Supplies and Postage	0.15	per cent
Rent	1.3	per cent
Heat, Light and Power	0.3	per cent
Taxes and Licenses	0.2	per cent
Insurance	0.15	per cent
Repairs	0.1	per cent
Depreciation of Store Equipment	0.3	per cent
Interest	1.0	per cent
Miscellaneous Expenses	0.7	per cent
Losses from Bad Debts	0.35	per cent
Total Expenses	17.3	per cent
Gross Profit on Volume of Business	19.1	per cent
Net Profit on Volume of Business	1.8	per cent
Turnover of Stock (Times a year)	10.1	

In many cases, however, the expenses exceed the figure given in this survey, and even exceed one-fourth of the sales. Consequently there is quite a wide range in the cost of operating a retail store and this is one of the important reasons why some stores are successful while others fail. Other important factors influencing the monetary result in conducting retail business are deficient capital and personal qualifications for the job.

Chapter XVI

FOREIGN MARKETING OF MEATS

Meat Exports Important in Early American History While the founding of the livestock industry in this country primarily had for its purpose the supplying of the settlements along the Atlantic seaboard with meat and other animal products, the export trade became the factor which made it develop to vast dimensions. All through colonial days the revenue from the sale of salt pork and barreled beef in the West Indies constituted an important source of income for the colonies. Similarly, the agricultural migration, which resulted in the settling of the middle and far west, and the development of transportation facilities from the interior of the country to the seaboard, was largely the response to the increasing demand of western Europe for supplies of grain and meat to feed its growing industrial population.

Exports Dwindling Since 1900 The transition to the twentieth century marked a change in this development since the export of agricultural products began to decline yearly, from that time until the beginning of the World War, when beef required a net import to meet our needs. The reasons for this significant falling off of our export trade in meat products were threefold — first, several European countries adopted definite policies to make them less dependent on foreign supplies; second, other surplus-producing countries like the South American republics, Canada and Australia, developed a strong competition against our products, being able to produce grain and beef cheaper than it could be done in this country; and third, this country developed flourishing industries to which a steadily increasing propor-

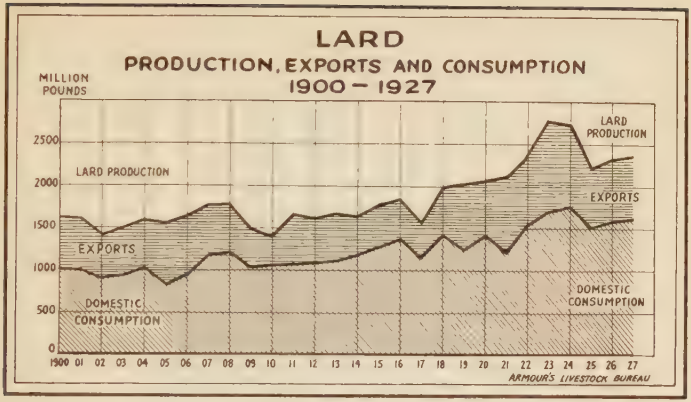

LARD
PRODUCTION, EXPORTS AND CONSUMPTION
1900 – 1927
MILLION POUNDS
2500
2000
1500
1000
500
0
LARD PRODUCTION
EXPORTS
DOMESTIC CONSUMPTION
1900 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ARMOUR'S LIVESTOCK BUREAU

Fig. 54

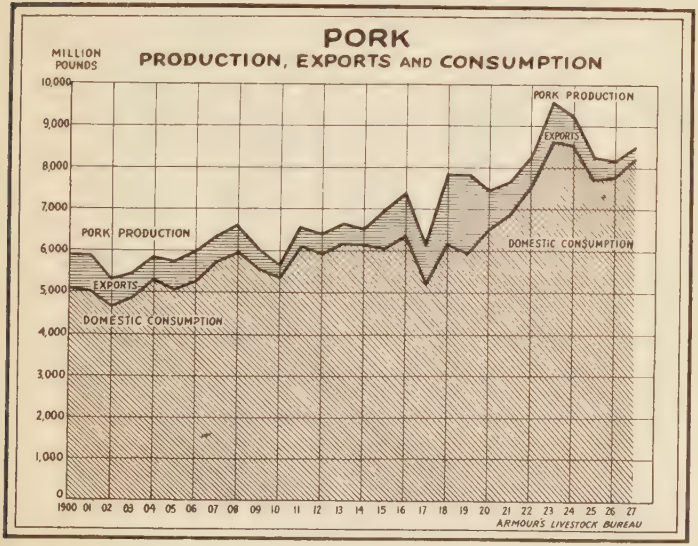

PORK
PRODUCTION, EXPORTS AND CONSUMPTION
MILLION POUNDS
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
PORK PRODUCTION
EXPORTS
DOMESTIC CONSUMPTION
1900 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ARMOUR'S LIVESTOCK BUREAU

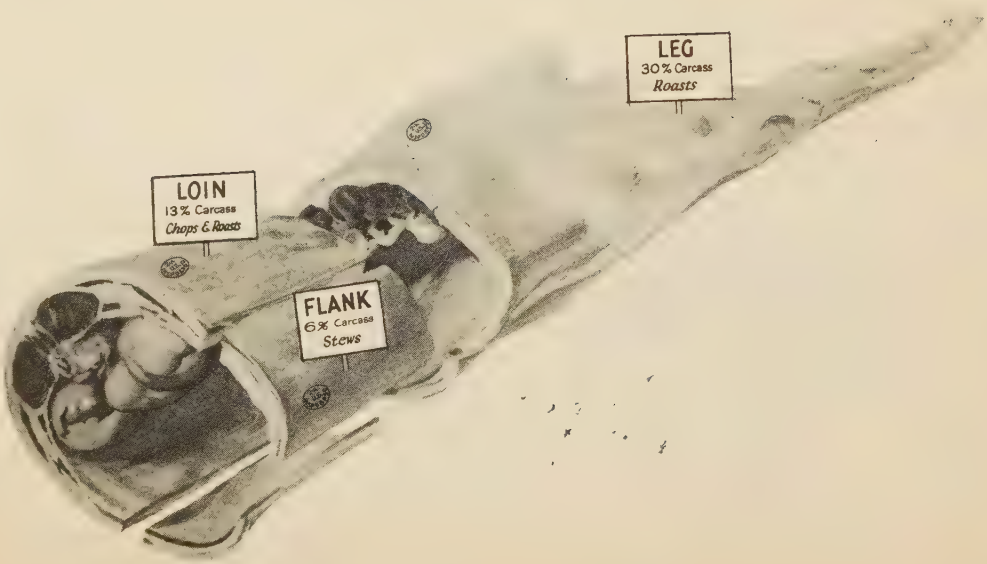
Fig. 55

tion of the farm production became diverted. More and more the object of American agriculture came to be the supply of our own industrial population with the farm products necessary for food and clothing.

The Effect of the War on the Export Trade The World War upset all natural developments and trends and forced the belligerent parties to secure as much food products as possible at any price and wherever it was available. American agriculture then responded to the call for food products from European powers which could not supply their armies and home population from the scant output of their own reduced production (Tables VI and VII). Since 1919-20 exports of meat products have declined materially although total U. S. production has increased.

Production, Exports and Consumption Figure 54 illustrates the production, exports and consumption of U. S. Inspected pork from 1900 to 1927. The exports in 1927 were smaller than in any previous year and much smaller than any time during the past fifteen years, but the volume and percentage of domestic consumption have increased tremendously. Foreign outlets for packers have been so curtailed that all must operate on the basis of the domestic market. Figure 55 presents corresponding data on lard for which no such problem has existed similar to that in pork. Exports of lard were somewhat less in 1926-27 than during the years immediately after the war, but there is nothing to indicate a definitely unfavorable situation. Domestic consumption has expanded gradually, although per capita consumption has not grown as quickly.

Wholesale Cuts of Lamb — Foresaddle



Wholesale Cuts of Lamb — Hindsaddle

Packers Maintain Foreign Branch Houses and Agencies

In order to dispose of the large quantities of pork and lard which could not be sold on the domestic market without the most serious effect on prices of provisions, as well as of live hogs, a number of packing companies have developed extensive organizations for the selling of their products in foreign countries. Figure 56 serves as an illustration of the geographic features of such an organization

Armour and Morris Foreign Houses (stars), and Agencies (dots).

Fig. 56

Location of Foreign Markets

It appears there are two main geographic groups of such foreign agencies. First, houses and agents are distributed densely over the West Indies and the northern and western coast of South America. Although these agencies are so numerous that not all of them can show up on a map of such a small scale, still the trade in this area is very limited in quantity and comprises mostly lard and lard compounds besides some barreled beef. The stars in Brazil, Uruguay,

Argentina and Paraguay indicate the South American plants belonging to Armour and Morris. These plants do mostly export trade of beef to Europe, but also some local business. The other big group of foreign agencies covers the western part of Europe. Great Britain offers the largest and most attractive market for the higher quality pork products like bacon and hams but takes also considerable quantities of lard. Continental Europe, on the other hand, is a heavy buyer of dry salt pork and lard.

The British Bacon Market As mentioned, the American export trade in meats has virtually been limited to pork products—bacon, hams, dry salt pork and lard. With respect to the three latter products, the trade of this country is practically unchallenged on the international markets, no other countries having appreciable quantities available for export. In the bacon trade, however, American products are involved in a most serious competition, the nature and problems of which are of considerable importance to American agriculture. The inter-

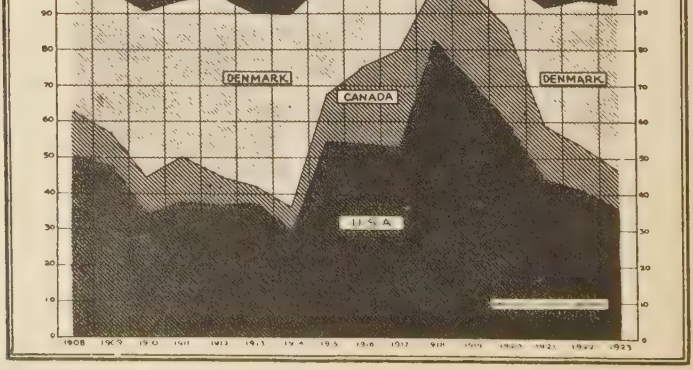


Fig. 57

national bacon market is, for all practical purposes, identical with the British market. No other country imports bacon in such quantities as to influence the trade as a whole.

Competition in the Bacon Trade At the present time, with reference to origin, the English bacon supply is largely made up of five kinds—Domestic, Irish, Danish, Canadian and American. Previous to the World War there was a fairly constant relation between the quantities imported from the various countries, Denmark, however, getting more and more in the lead, and the volume from "other countries," mostly European, also increasing. This condition was entirely upset during the years of war. Due to the blockade, Denmark dropped entirely out of the British market. The United States and Canada thereby got a chance to capture the entire business, and also to enjoy the increased volume of trade caused by the demand for the armies and the decline in home production in England. The post-war period has been characterized by the re-taking of the market by the Danes. The quantities sold by this country and Canada have been proportionately reduced so that the volume of business done by the competing countries is now approximately the same as before the war (Figure 57).

Bacon Prices in England The Irish bacon commands the highest price due to its high quality and the nearness to market. Danish bacon comes next, commanding a relatively high price on the basis of uniformity and quality, and because of the mild cure sufficient for the short shipment. Canadian bacon occupies an intermediate position while American bacon falls behind largely because of quality, but also to some extent due to the stronger cure necessary for the trans-oceanic shipment.

Domestic Market First Consideration In this country, the domestic market has always been the first consideration, and this fact, in connection with the special agricultural conditions in the cornbelt, have resulted in no attempt being made until recently to incorporate the production of English type bacon in the American hog breeding program. What this country has to offer in England is therefore the surplus of the domestic production in such selections as will most nearly suit

TABLE VI.—EXPORTS OF MEAT AND LARD

YEAR	BEEF	VEAL	MUTTON, LAMB	PORK	ALL MEATS	LARD	LARD and MEATS
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
1907	354	...	2	615	971	594	1,565
1908	228	...	2	632	862	587	1,449
1909	164	...	2	485	651	462	1,113
1910	111	...	2	324	437	382	819
1911	91	...	3	470	584	610	1,194
1912	56	...	6	456	518	558	1,076
1913	45	...	5	468	518	581	1,099
1914	93	...	5	393	491	465	956
1915	387	...	9	913	1,309	494	1,803
1916	285	...	7	1,022	1,314	463	1,777
1917	365	...	4	941	1,310	388	1,698
1918	711	...	3	1,714	2,428	559	2,987
1919	287	...	4	1,878	2,169	789	2,958
1920	155	...	5	929	1,089	643	1,732
1921	52	...	8	759	819	903	1,722
1922	46	...	2	727	775	799	1,574
1923	42	...	3	960	005	1,075	2,080
1924	40	...	2	735	777	986	1,763
1925	39	...	4	549	592	719	1,311
1926	38	...	2	426	465	733	1,198
1927	34	...	2	316	352	717	1,069

TABLE VII.—IMPORTS OF MEATS AND LARD

YEAR	BEEF	VEAL	MUTTON, LAMB	PORK	ALL MEATS	LARD	LARD and MEATS
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
1907	...	...	...	.....	.....	.....	.....
1908	...	...	...	.....	.....	.....	.....
1909	...	...	...	.....	.....	.....	.....
1910	...	...	...	.....	.....	.....	.....
1911	...	...	...	.....	.....	.....	.....
1912	.....	...	...	.....	.....	.....	.....
1913	35	...	...	1	36	.....	36
1914	253	5	18	31	307	.....	307
1915	125	1	14	7	147	.....	147
1916	23	1	14	2	40	.....	40
1917	25	1	6	4	36	.....	36
1918	125	1	1	4	131	.....	131
1919	53	5	7	7	72	.....	72
1920	43	8	62	3	116	.....	116
1921	23	4	18	1	46	.....	46
1922	32	5	11	1	49	.....	49
1923	24	2	6	1	33	.....	33
1924	21	4	2	7	34	.....	34
1925	17	3	2	8	30	.....	30
1926	41	4	2	12	59	.....	59
1927	82	8	3	21	114	.....	114

Chapter XVII

PRICES

Supply and Demand Determine Prices

The price at which livestock and meat sell is determined, as is the case with all commodities, by two primary factors—the volume offered for sale (supply) and the desire of the buying public to secure these products in the quantities in which they are offered (demand). Neither of these two factors is constant and prices, therefore, fluctuate periodically and even from day to day.

Effect of Variations in Supply on Livestock Prices

The supply of livestock is expressed fairly accurately in the receipts at public stock yards. A study of livestock receipts will reveal considerable variations. First, there are general long-time trends and cycles which cover periods of a few years. Most conspicuous of these latter is the hog cycle expressed in the fact that the number of hogs raised have a tendency to increase and decrease in cycles covering two to four years. Besides there are very distinct seasonal fluctuations in receipts, also variations from day to day (Chapter VIII). When the receipt curve and the price curve are compared as in Figure 41 it is striking that these stand in an inverse relationship. When receipts are high, prices tend to be low, and vice versa. This relationship is not quite exact as the kind and quality of hogs marketed at the different times of the year are subject to considerable variation. In the main, however, the rule holds.

Effect of Demand on Livestock Prices The demand for livestock is intimately bound up with the demand for meat as expressed in the prices the public is willing to pay. Price quotations quite exactly register fluctuations in demand. There is a very definite relationship between meat prices and livestock prices. When meat prices increase, livestock prices will tend to rise, and vice versa. Relationships between groups of variable data are technically expressed in the so-called correlation-coefficient which the variables display. When the coefficient is 100 per cent, the relationship is perfect. This Bureau has demonstrated statistically that hog prices at public markets show a perfect relationship, and therefore are perfectly determined by variations in receipts combined with the variation in prices on provisions and lard.

Variations in Demand In the livestock and meat business the demand of the public for meat products is important in determining price levels. This demand is subject to the influence of a great many factors and changes in tastes. In times of general prosperity and full employment at high wages the demand for meat products is strengthened, while periods of depression have a tendency to make the public look for cheaper substitutes. During periods of hot weather, also, the demand for meat is somewhat slackening, except for ready-to-serve cold meat products, like boiled ham and sausages. Changes in tastes have considerable effect on the business, when a sufficient period of time is taken into consideration. There is thus a distinct tendency on the part of the housewife to prefer smaller and leaner cuts such as can only be secured from light-weight, high quality animals. An example of changes in trade customs is also given in Figure 58 illustrating, at ten-year intervals, the volume of different pork products which could be bought

for the price of a hundred-pound live hog. It is evident that the demand and thereby the price for mess pork, which product may be taken as typical of the old-fashioned fat pork, is very materially reduced, while the price level for the leaner cuts like shoulder and ham is improved or at least remains the same.

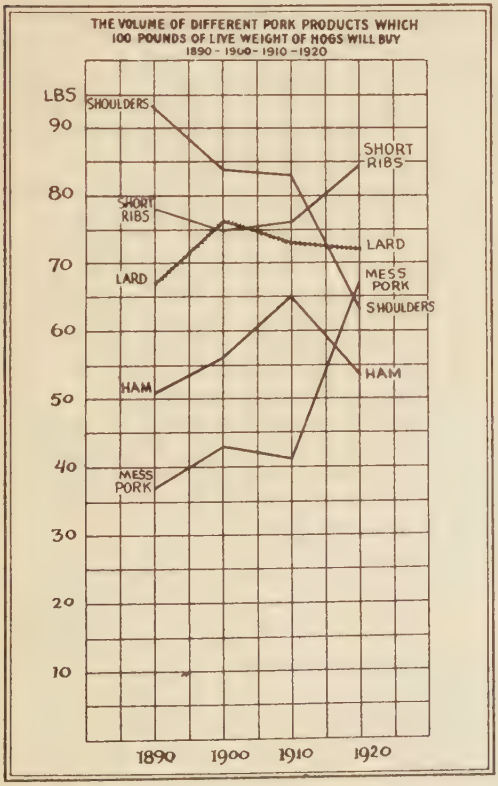


Fig. 58

These changes in demand have a direct bearing on the livestock industry and constant adaptation on the part of stockmen is necessary in order to co-ordinate production with consumptive demand, producing for the consumers the products they want and securing these by a maximum return for themselves.

Chapter XVIII

AGENCIES FOR THE PROMOTION OF TRADE

Producers' Agencies For many years, livestock associations have dealt with production problems, while the western producers have established brand inspection at the principal markets for safe-guarding the sale of individual property. Since the war, several organizations, like the Highland Hereford Association, have been established which deal with the movement of feeder calves from the range directly to the feedlot. Probably the biggest effect so far, however, has not been in increasing the volume of trade but rather in improving the quality.

Livestock Exchange Activities Since the war, material increases in the movement of livestock to eastern cities for slaughter have come about as the result of the livestock exchanges' attempts to bring more buyers onto the central markets. The ability of the packers at these eastern points to offer their trade meats still possessing the bloom of unrefrigerated products has undoubtedly stimulated certain classes of consumption.

Packers' Organizations The packers of the United States are organized into the Institute of American Meat Packers. The activities of the Institute cover such phases as education and information on the nutritive value of meats, the cooking of meats, the use of the less expensive cuts and material of a similar nature. Furthermore, the educational activities of the Institute in its own industry provide meat salesmen with promotional arguments to broaden their outlets.

Meat Councils In most large centers of population, the meat retailers, wholesalers and packers are organized into meat councils for the purpose of stimulating meat consumption in their own cities and avoiding or relieving gluts in the local trade. Specific campaigns are organized for the purpose of clearing the market of slower moving cuts, and aggressive steps are taken to combat the detrimental propaganda of sellers of so-called meat substitutes.

National Livestock and Meat Board All agencies involved in the production of livestock and meats are centered in an organization, with headquarters at Chicago, known as the National Livestock and Meat Board. The council is made up of eleven producers, two packers, two commission men and two meat retailers. It is supported by a collection of ten cents per car of livestock marketed, five cents being paid by the packer and five cents being paid by the shipper. Its activities have consisted in widespread advertising of meats (Figure 59), assistance in developing local meat councils, and planning of promotional work.

Educational Institutions The Division of Animal Husbandry of the U. S. Department of Agriculture and the Departments of Animal Husbandry and Home Economics of the different Agricultural Colleges are constantly supplying information as to values of meats and methods of preparing them. These publications may be secured free on application.

Advertising -The packing companies do considerable advertising in order to increase their sales and to establish their brands in the minds of the public. Also some educational advertising is used in order to promote a general understanding of the nature of the business and the service it performs. As mediums, all classes of papers are used, as well as

billboard advertising and show-window displays. The principal feature of advertising evolution in recent years has been the increase in color work especially in women's magazines (Page 112) with especial em phasis on the appetizing qualities of meat products

Public Relations With so many groups of people co-operating in the great livestock and meat industry it is essential that proper and cordial relations be maintained all along the line from farmer to city housewife. Realizing the importance of this problem the packers, railroads and other marketing agencies have established special public relations departments, also departments of trade relations to deal with the retail trade, bureaus of economics, and livestock bureaus to co-operate with the farmers, their organizations and institutions for education and research.

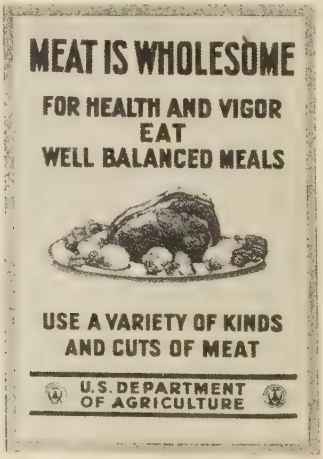


Fig. 59—Poster designed by the U. S Department of Agriculture and published by the National Livestock and Meat Board

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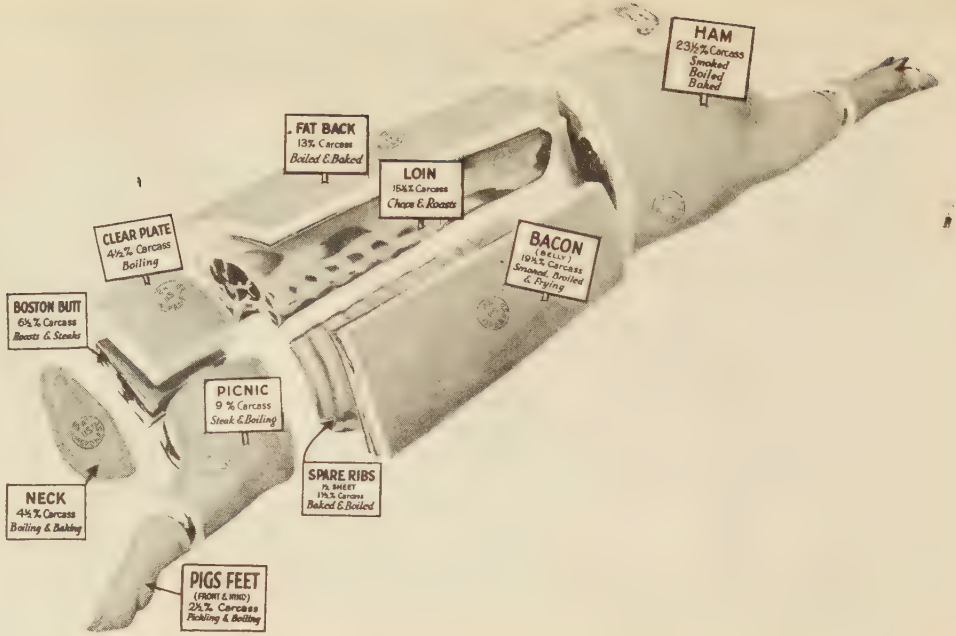

Wholesale Cuts of Pork

Sample of Packing House Advertisement. Emphasizing the appetizi qualities of the meat.

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